a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

NOVEMBER 1960

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University Microfilms
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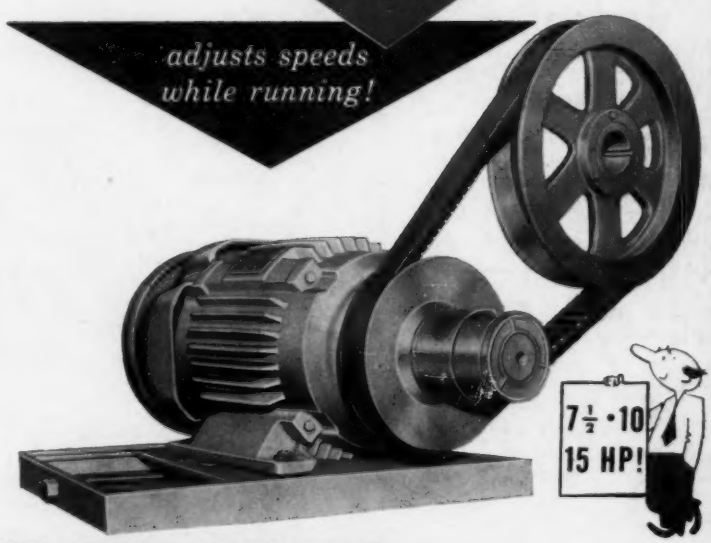
Ann Arbor Mich

New Low Cost
TEXTILE
PULLEY

adjusts speeds while running!



REEVES *vari-spin drive*

● Speed settings in 2:1 range are accurately made in seconds—*while the frame is operating.*

A low cost unit, the compact 975-T features REEVES' exclusive "close grooving" for positive lubrication . . . free sliding shifting action.

Contact your nearest REEVES or RELIANCE representative, or write for complete details in Bulletin T37-G586-1.

for a wider speed range, 3 to 1, fixed center drive, write also for details on REEVES No. 16-10 Vari-Spin Drive . . . through 15 hp. Ask for Bulletin T37-G561-1.

Product of REEVES PULLEY COMPANY Division of

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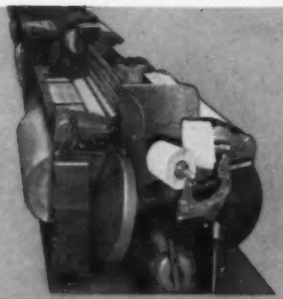
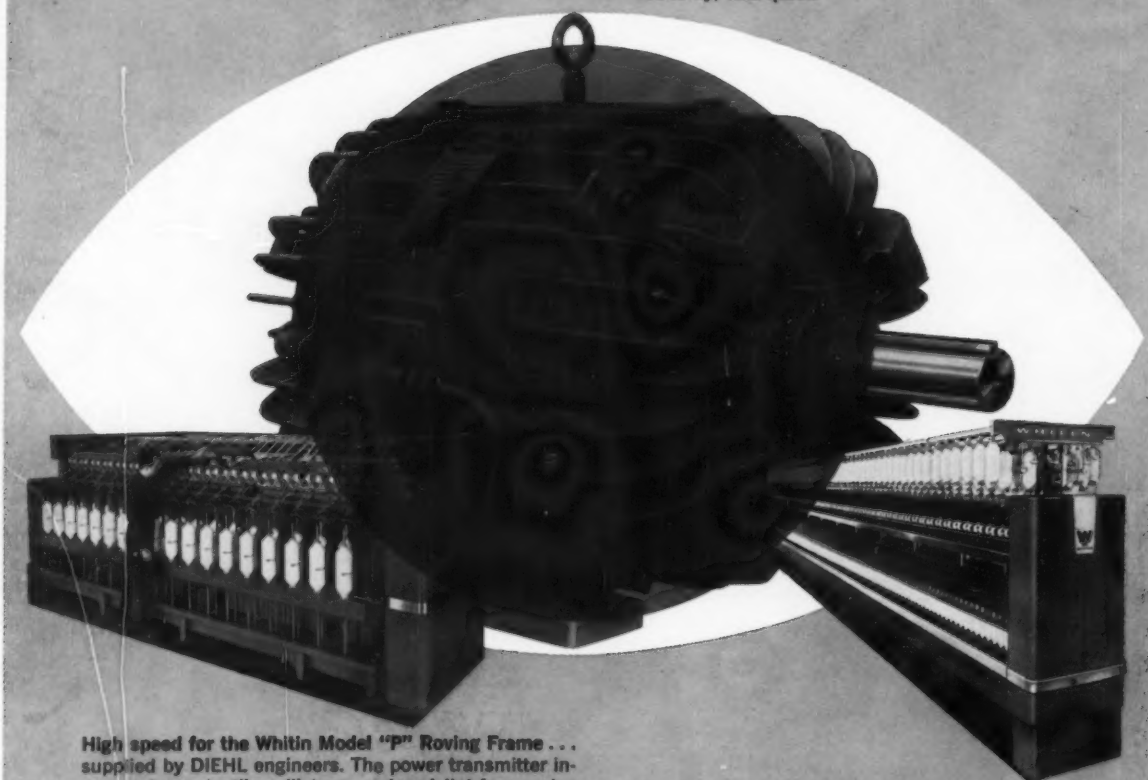
DEPT. 2011A, CLEVELAND 17, OHIO
CANADIAN DIVISION: TORONTO, ONTARIO
Sales Offices and Distributors in Principal Cities

There are more to these machines than meet the eye...



Smooth, fast starts . . . positive picking and maximum inertia with minimum size. These were Draper's specifications for their new shuttleless loom. DIEHL engineers developed a power transmitter combining an inverted type high inertia motor with a fast, positive clutch-brake mechanism. The result—increased production speeds, economy, and quiet.



High speed for the Whitin Model "P" Roving Frame . . . supplied by DIEHL engineers. The power transmitter incorporates a textile mill type enclosed lint-free motor with an integral mounted air operated disc clutch and an electronic system which automatically controls the speed during start up acceleration. DIEHL will continue to drive the Model "P" indefinitely.

Power the "Piedmont" spinning frame . . . was the problem Whitin had for DIEHL engineers. DIEHL job designed a totally thermal protected motor which provides smooth start and acceleration over its entire operating range.

The result—small size, excessive overload capacity and prevention of yarn breakage.

DIEHL'S engineering service is as much a part of their tradition of quality as are the superior power transmitters they design and build to meet your particular needs. DIEHL originated the power transmitter for the textile industry.

So, when you designate DIEHL, 75 years of experience are working for you.

*Trademark of DIEHL MANUFACTURING COMPANY

Diehl®

DIEHL MANUFACTURING COMPANY

A Subsidiary of THE SINGER MANUFACTURING COMPANY

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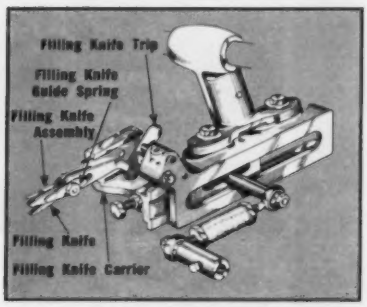
2761

DRAPER BRIEFS

NEWS OF INTEREST IN WEAVING

#25, #26, #27 & #28 DRAPER THREAD CUTTERS

A series of thread cutters designed to help weave better cloth at less cost



#25 Draper Thread Cutter

Stafford Thread Cutters were standard equipment on Draper looms until we introduced the #25 Draper Thread Cutter about five years ago. This new and different thread cutter features a simplified construction offering reduced maintenance costs, easier settings, and a filling knife assembly engineered to reduce drag-ins by cutting and holding the filling yarns better.

The #25 Draper is now our most popular thread cutter. It has been furnished generally on most orders for new looms in recent years. It has also been applied to existing Draper looms in 375 mills where, to a varying extent, it replaces Stafford Thread Cutters.

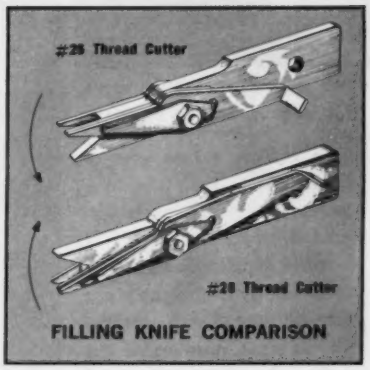
#26 Draper Thread Cutter

This thread cutter is similar to the #25 except that it has been modified as follows:

1. The Filling Knife assembly has been lengthened to permit positioning Filling Knife Carrier parts farther from the Lay. This gives a broader range of adjustment under all loom Battery conditions and makes the attainment of a correct setting easier.
2. To ensure adequate tension control with the lengthened Filling Knife, a second Filling Knife Guide Spring is incorporated so that there is a spring on each side of the knife assembly.
3. A much thicker Filling Knife, providing a longer tail on the filling between the cutting and holding side of knife, affords additional protection against a possible pull-out from knife, *especially in weaving filament yarns.*
4. As a further precaution against drag-ins, the camming surface of the Filling Knife Trip has been lengthened to prevent premature opening of the knives caused by improperly set Filling Cams.

#28 Draper Thread Cutter

The #28 Thread Cutter is a brand-new construction. It is the same as the #26 except that the cutting action is reversed, being from the bottom upward like our Stafford Thread Cutters.



FILLING KNIFE COMPARISON

#27 Draper Thread Cutter

This thread cutter is the same as the #28 Thread Cutter except that the Filling Knife is of conventional thickness (1/8") like the #25 Draper and our Stafford Thread Cutters.

#28 DRAPER THREAD CUTTER

DRAPER CORPORATION • HOPEDALE, MASS.

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"We dyed half a million yards this week... with no rejects!"

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*U.S. Patents 2,740,689 and 2,820,690

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Dept. TI-A

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☐ Please have a Sales Engineer call.

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- **No. 35 — Modification of Wool with Peroxygen Compounds.**
- **No. 43 — Treatment of Cellulose and Cellulose Derivatives with Peroxygen Compounds.**
- **No. 52 — Bleaching with Some Peroxygen Chemicals.**
- **No. 53 — Fluorescent Agents in Peroxide Bleaching of Knit Goods.**
- **No. 60 — Successful Bleaching of Types 670 and 200 Nylon With Peracetic Acid.**
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- **No. 71 — Continuous Bleaching of Cottons with Silicate-Free Peroxide Solutions.**
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Textile Industries

Formerly "COTTON"

NOVEMBER 1960 VOL. 124, NO. 11

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The wide range of properties now available in Eastman's Epolene series provides greater flexibility in formulating polyethylene emulsions for softening "wash and wear" cottons and synthetics, and for textile lubricants and sizes.

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Penetration Hardness (100 g./5 sec./77°F., tenths of mm.)	2	5	1
Color (liquid), Gardner scale, max.	2	2	2
Brookfield Viscosity (cps. @ 120°C.)	1500	400	455

Epolene

EASTMAN low-molecular-weight polyethylene resins

VINOL

polyvinyl alcohol

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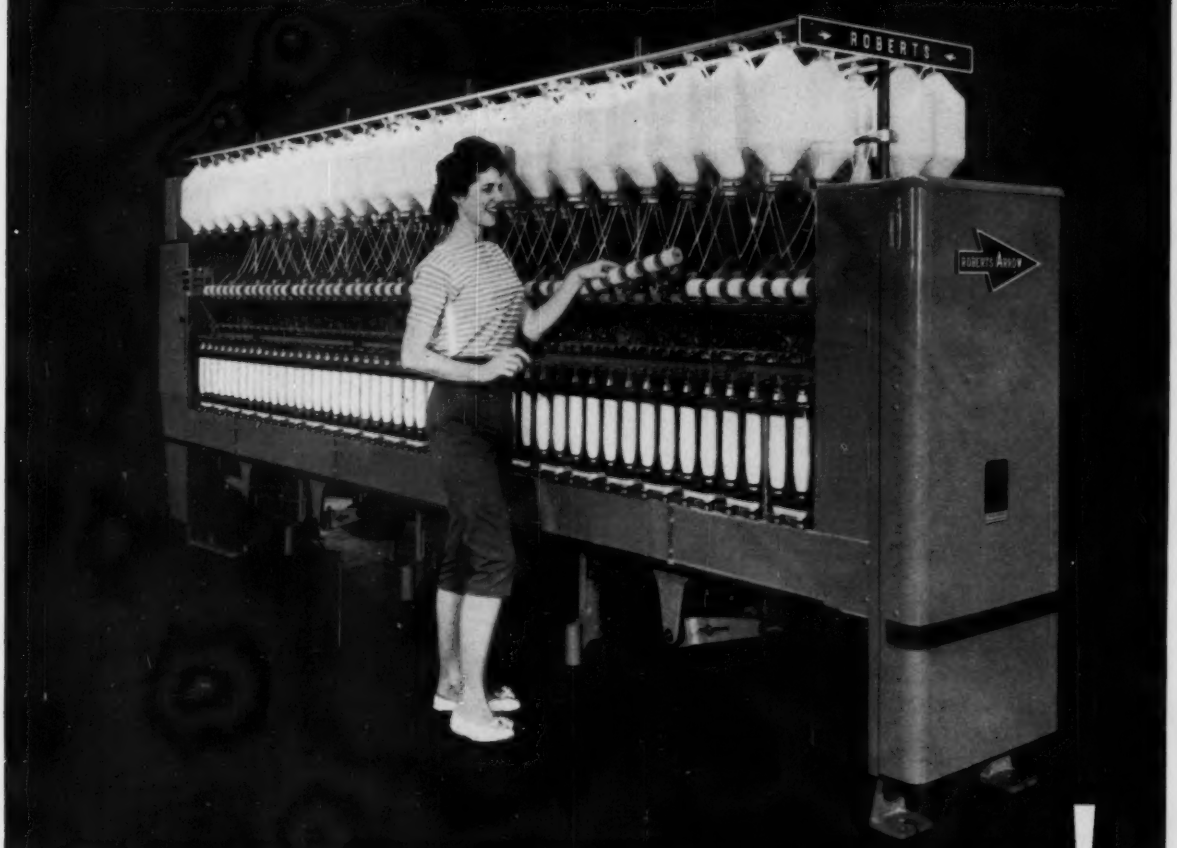

Spindle Speeds Over 13,000!

One of the most frequent questions asked today concerns high spindle speeds. The answer comes from many of the 850 Roberts Arrow Spinning Frames running in leading mills since 1956. Three examples are shown at the right.

The new and refined Arrow compares advantageously with all other all-ball-bearing frames and greatly outperforms all conventional and standard-type spinning frames. The Arrow offers the greatest dollar-for-dollar-value against any other make of frame in dependable performance, lowest initial cost, and maintenance-free operation.

Arrow Spinning is available for either the cotton or the worsted system for natural or man-made fibers or blends.

3 MILLS RUNNING ARROW FRAMES AT 12,300 to 13,200 R.P.M.

- **A major sheet manufacturer runs 36's warp yarn with 2" ring at 12,300 r.p.m. spindle speed on 44 Arrow frames.**
- **A major manufacturer of Dacron-cotton fabrics runs 50's on 66 Arrow frames with a 1-7/8" ring at 13,200 r.p.m. spindle speed.**
- **A major broadcloth manufacturer using 96 Arrow frames makes 40's with a 1-13/16" ring at 12,800 r.p.m. spindle speed.**

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

THE TEXTILE INDUSTRY *Banks on* BIJUR AUTOMATIC LUBRICATION

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With Bijur, a machine oils itself —while running. You profit from increased production on every machine. There are no stops for oiling and bearing failures are virtually eliminated.

When your machines are Bijur-equipped, even the most inaccessible bearings get the right amount of filtered oil at the right time.

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2368 A

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LUBRICATING CORPORATION
Rochelle Park, New Jersey

Pioneers in Automatic Lubrication

SHORTS & REMNANTS

Faithful Old Retainer

What better way to start off this month than to show you a picture of the former proprietor of S & R as he was honored by his friends and associates? That's **John C. Cook,** business manager of TI and vice-president of W. R. C. Smith Publishing Co. (and one-time author of this column) on the left:

He's receiving a watch from company president **Dick Smith,** as he finished 35 years with this here publishing outfit.

Incidentally, our ingenious young advertising manager, **Walter Mitchell,** again displayed the quick thinking which has gotten him where he is today—he was the first to ask John for his old watch.

Orchids to TI

"I would like to express my appreciation to you and your staff for the excellent coverage given by you to man-made fibers in your August, 1960, issue of TEXTILE INDUSTRIES."

JAMES L. TAYLOR
Asst. to Dir. of R & D
Burlington Industries, Inc.
Greensboro, N. C.

"You are to be complimented for publishing such a good, informative magazine. It has always been in my opinion the leader of textile publications."

H. R. LESTER, JR.
Supt. of Finishing Dept.
Pepperell Mfg. Co.
Lindale, Ga.

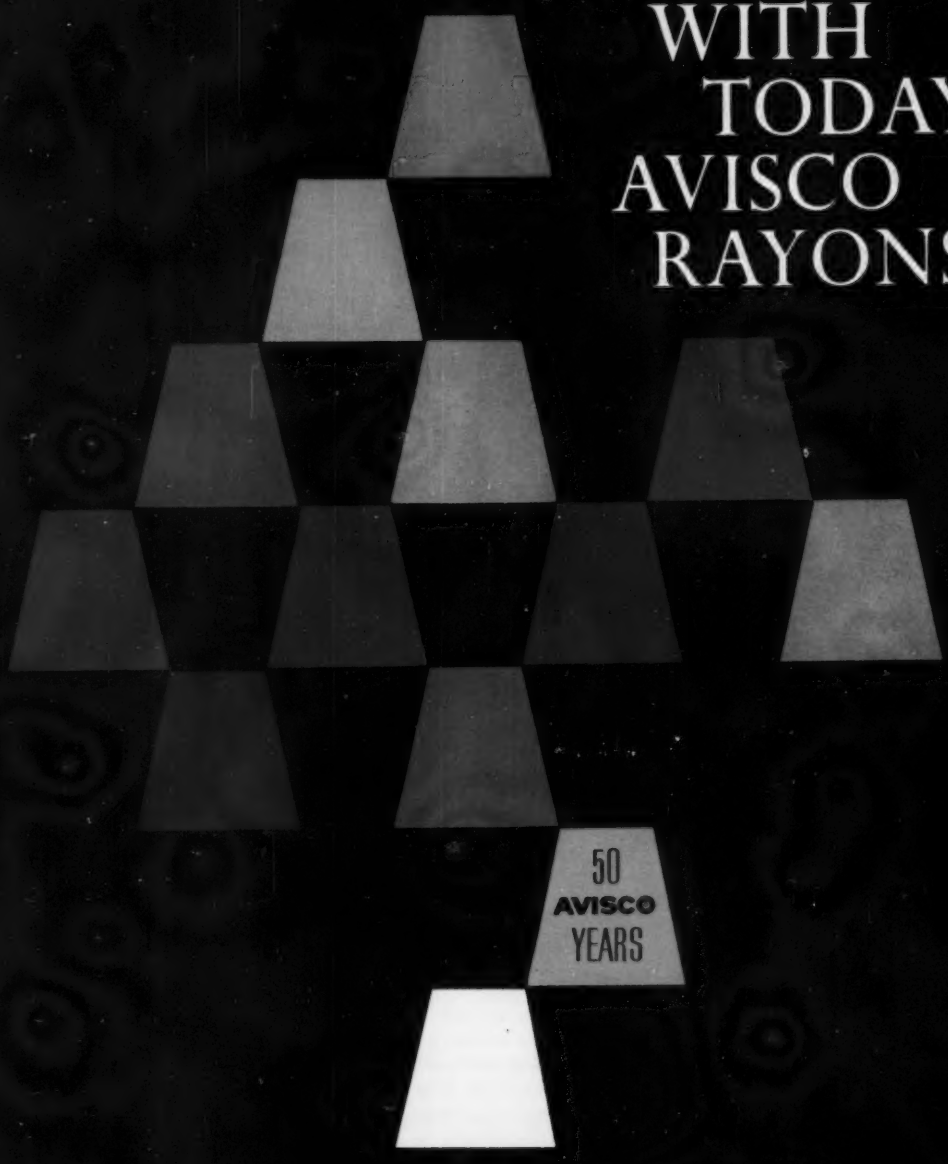
Bees, Mink, and Nylon

Some years ago the late Colonel

Continued on page 14

FIFTY YEARS

OF PROGRESS WITH TODAY'S AVISCO RAYONS!



TEXTILE EXCITEMENT 1910 CREATED BY AMERICAN VISCOSE COMPANY

AVISCO

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Early rayons had that silky look, were easy to dye and found ready acceptance in the millinery, lingerie and hosiery trades.

TEXTILE EXCITEMENT 1960 CREATED BY AMERICAN VISCOSE CORPORATION

Used alone or in blends, today's Avisco rayons make possible exciting new fabrics featured in all types of apparel. Avisco rayons give fashions the hand, color, texture and performance that means volume sales.

Creators of decorator fabrics, carpeting, bedspreads have woven magic around the home with today's Avisco rayon fibers. Soft and subtle or bold and dramatic, Avisco rayons achieve perfect results. The Avisco Integrity Tag on home furnishings fabrics symbolizes performance tested fabric quality.

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SUPER L® — Special long-wearing smooth staple rayon created for use in carpeting. Very soil resistant, frequently blended with natural and synthetic fibers.

* T.M. American Viscose Corporation

AMERICAN VISCOSE CORPORATION

Philadelphia 3, Pennsylvania • New York 1, New York

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Associated Companies (50% Owned): Chemstrand Corp. • Ketchikan Pulp Co. • AviSun Corp.

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LOOM SWITCH

with important DESIGN LEADERSHIP features...

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- Over-center cam type cover latch provides heavy clamping pressure on neoprene sealing gasket.
- Vibration or shock conditions will not affect toggle mechanism.
- Simplified wiring. Line terminals at bottom for easy floor pedestal mounting.
- Plenty of wiring space. 1¾" top and bottom. ½" at each side.
- Cover is interlocked to prevent opening when starter is "ON."
- Protected type overloads permit group fusing of several motors on a single branch circuit.
- Mechanical linkage is provided to force contacts open with direct pressure from handle.

Write for Loom Switch Bulletin 2510-R.
Address Square D Company, 4041 N. Richards Street, Milwaukee 12, Wisconsin.

SQUARE D COMPANY

wherever electricity is distributed and controlled

MODERN DYEHOUSE EQUIPMENT

THE DEPENDABLE KWG SKEIN DYEING MACHINE

KWG Double Reel Skein Dyeing Machine —all stainless steel unit built in capacities to 1000 pounds.

FOR QUALITY DYEING
WITHIN INCREASED BUT MORE NORMAL TEMPERATURE and PRESSURE LIMITS

Perfection in dyeing—for natural and the new synthetic fibers—is yours with KWG Skein Dyeing machines. Rugged construction . . . improved 'Ferrous-Wheel' performance . . . give you the penetration and evenness of color—the permanence of tone—for that extra measure of sales appeal—without concern for costly high-temperature, high-pressure methods. Dual-operations possible including scouring, dyeing and shrink-proofing, or scouring, bottom bleaching and dyeing of pastel shades.

You can point the way to extra sales . . . extra profits . . . today by writing Klauder Weldon Giles. A KWG representative will be glad to survey your needs. If necessary, he'll design special equipment to your specifications. There's no obligation.

Klauder Weldon Giles MACHINE COMPANY

ADAMS AVENUE & LEIPER STREET • PHILADELPHIA 24, PA.

SHORTS & REMNANTS

(from page 8)

Springs put chlorophyll in sheets and intimate apparel; now at last he's been topped. We've just had a note from Claussner Hosiery Co., of Paducah, Ky., to tell us that their subsidiary, Beautiqué Stockings, Inc., is now marketing hosiery with a built-in beauty treatment. It contains all these: mink oil, turtle oil, royal jelly from the queen bee, lanolin, sesame oil, and "secret formula CXS." And, we assume, miracle nylon.

► Our Man in Ridgefield (Connecticut, that is) reports seeing a name in the society columns of the local paper reporting on the doings of a lady with a good textile name: **Mrs. Carol Cotton Sheets.** We passed this along to the National Cotton Council.

Corrections and Additions

Franco Scalamandré points out an error in his article, "Hand Screen Printing," which appeared in our September issue. On page 112, at the top of the third column, the first sentence should read: "If a client wants a high degree of fastness *to washing*, we of course advise vat colors only."

And in the same issue we made note that our coverage of automatic screen printing machines omitted the Meccanotessile, since information was not available as we went to press. Well, we got a letter right back from **Leonard H. Platnick,** president of Regent Machinery Corp., 110 W. 40th St., New York 18, N. Y., who says, "I should like to advise you that we are the representatives for Meccanotessile in the United States, Canada, Mexico, and South America."

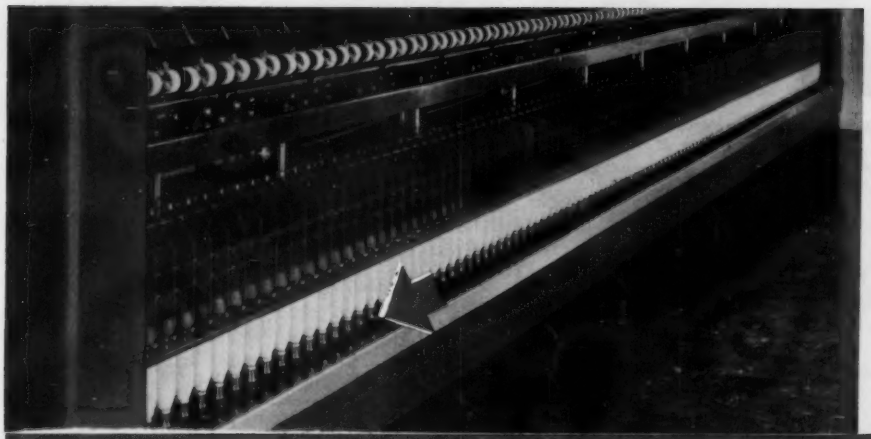
More Signs of the Times

Seen recently in San José, Costa Rica: a bar that sells "jai bols," and a boy's baseball jacket called "Big Liger." (José Jimenez must have been there.) And on an Atlanta drive-in: "The noblest of animals is the dog, and the noblest of dogs is the hot dog—It feeds the hand that bites it."

Power Looms

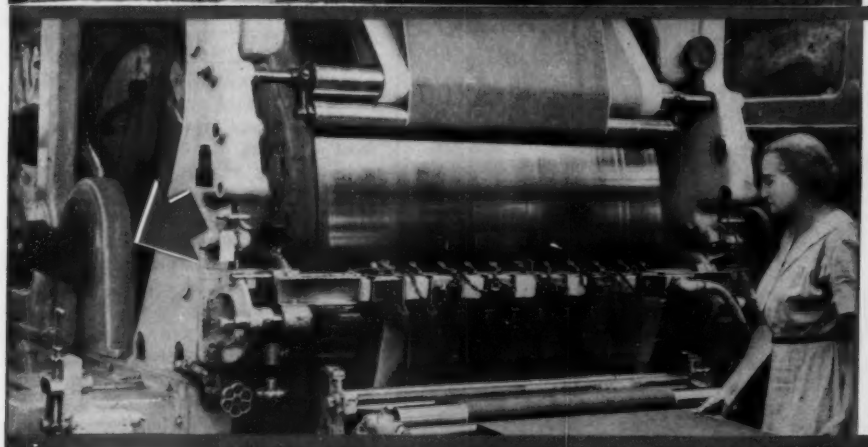
"Other than foot or hand, when did power looms come into operation in the United States, and if other than electric, when was electric power first used for looms in the U. S.?"

A. W. GRESSINGER
Supt. of Industries
Arizona State Prison
Florence, Ariz.



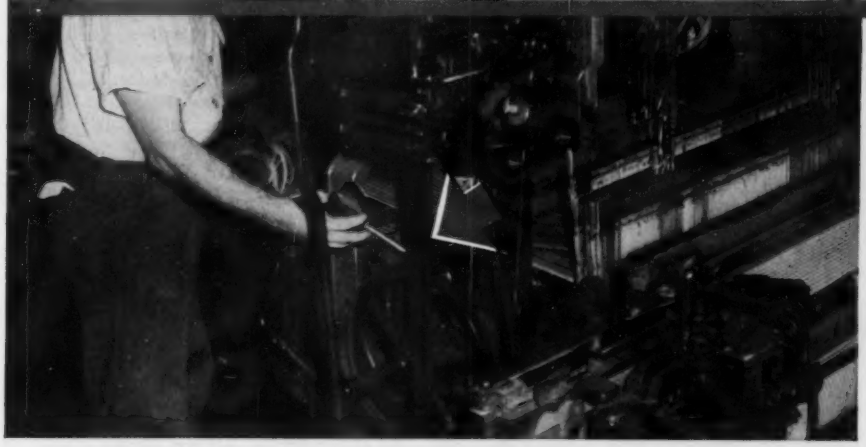
SPINESSO® OIL
assures clean spindles

Specially made for high-speed spindles, assures efficient gum-free operation, provides instant lubrication during critical warm-up periods.



NEBULA® EP
multi-purpose grease

Lubricates steam-heated can bearings and other "hot spots." Stays on the job under high temperatures; provides outstanding extreme pressure lubrication for textile machine-bearings and gears.



EPIC® LUBRICANTS
save oil and time

Frequency of oiling loom parts is reduced because these lubricants stick tightly to metal...reduce stains...save labor.

WEAVING PROFITS WITH ESSO LUBES

Labor, time and machine-saving Esso lubricants like those above can help cut your lube and maintenance bill. Why not investigate the complete line of Esso textile machine lubricants. Contact your local Esso office or write Esso Standard, Division of Humble Oil & Refining Company, 15 West 51st Street, New York 19, New York.

Esso

In Industry after Industry..."ESSO RESEARCH works wonders with oil"

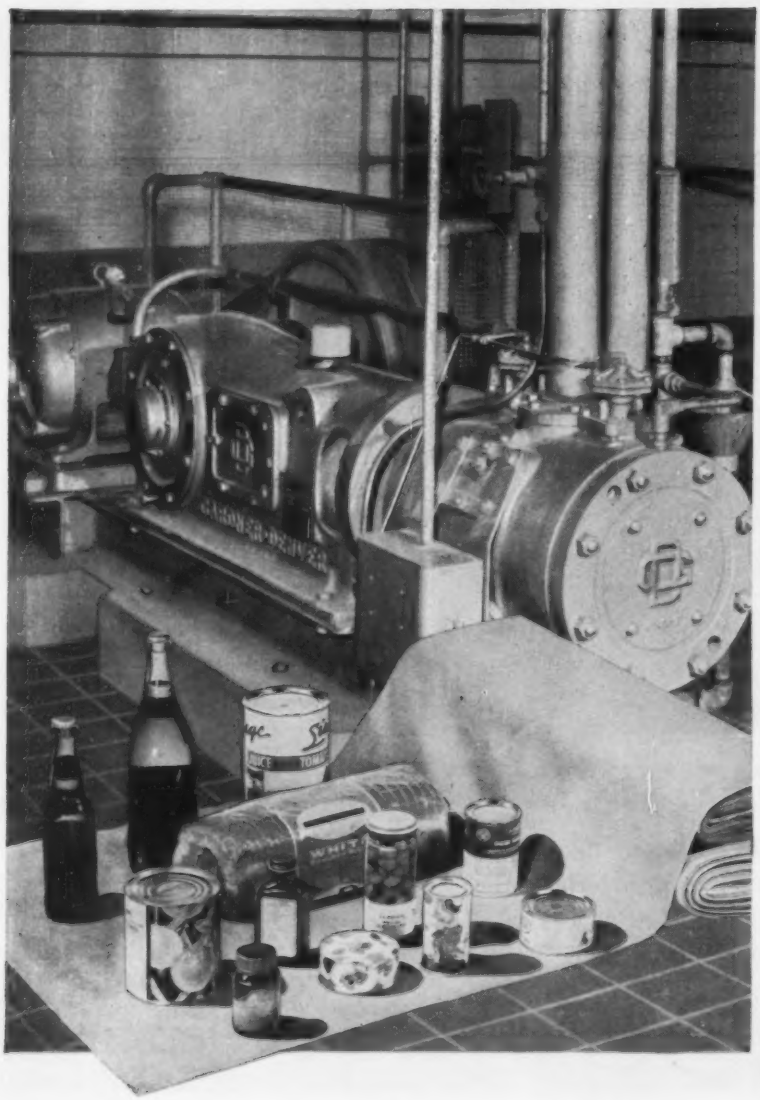
EQUIPMENT TODAY FOR THE CHALLENGE OF TOMORROW

GARDNER-DENVER

Since 1859

If a trace of oil in your air line is *too* much, find out about Gardner-Denver oil-free air compressors. They've enabled many an industry to utilize low-cost, compressed air power without use of special filters. Parts in the cylinder need no oil or water lubrication. Available with either carbon pistons and rings, or aluminum pistons and rings made of DuPont Teflon with 25% Fiberglas fill. Oil-free compressor sizes from 4 to 1400 cfm. Write for details. Gardner-Denver Company, Quincy, Illinois.

Pure, oil-free air
helped make these products better



SHORTS & REMNANTS

(from page 14)

As far as we can determine, the first power loom in the U. S. went into operation in the Boston Mfg. Co., Waltham, Mass., in 1815. This was operated by water power. The first loom to be powered by electricity was started up in the Columbia Mills, Columbia, S. C., on July 31, 1893. We were unable to find when and where the first loom with individual motor drive went into operation. Can any readers help?

Reprint Requests

Series on printing by hand and by machine (Sept. 1960)—**Arthur Dentz,** Columbia Textiles, Inc., NYC; **Walter Winkler,** Winkler Textile Print Works, Inc., Passaic, N. J.; and a host of others.

"Choosing the Best Draft" (May 1960) (50 copies)—**George A. Browder,** plant manager, Hannah Pickett and Martha Baum Plants, J. P. Stevens & Co., Inc., Rockingham, N. C. (We didn't have 50 copies, but were able to provide 20.)

"Symposium on Core Testing Wool" (Jan. 1950)—**John E. Haigh,** sec., Harold H. Haigh & Sons Ltd., Huddersfield, England; and **J. N. Skinner,** off. in chg., test. lab., School of Wool Technology, U. of New South Wales, Kensington, Australia.

Tex chart—**Katherine Glass,** R & D Div., Callaway Mills Co., LaGrange, Ga.; **Nelson Baum,** M. Hausman & Sons, Inc., NYC; and **O. L. Moore, Jr.,** supt., Chase Bag Co., Goshen, Ind.

Textured yarn articles—**Ralph Whitaker,** Fred Whitaker Co., Philadelphia, Pa.; **Elwood W. Munz,** Roselon Yarns, Inc., Danville, Pa.; and **Frances Delaney,** Malden Mills, Lawrence, Mass.

"Quality First" (June 1960)—**R. T. Ryan,** qual. mgr., The Kendall Co., Chicago, Ill.

"Printing With Pigments" (May 1959)—**A. Ruggiero,** PA, USF-Arnold Finishing Co., Adams, Mass.

"Training Seaming Operators" (April 1953)—**R. Heinig,** Bear Brand Hosiery Co., Kearney, Nebr.

"14 Steps to Longer Spindle Life" (Nov. 1959)—**F. Milne,** PA, Paton Mfg. Co., Sherbrooke, P.Q.

"Rewiring Loom Stop Motions?" (Oct. 1959)—**Robert E. Griffith,** Standard Tapestry Co., Philadelphia, Pa.

More Leisure, More Textiles

We were interested to learn the other day, from a New York newspaper, that Americans will spend a

whopping $43 billion this year on leisure-time activities. Among the most popular after-hours (or between-hours) activities listed were boating, bowling, fishing, and movie-going. On these, Americans will spend $3½ billion, $3 billion, $2 billion, and $1.8 billion, respectively.

This was certainly good news for the textile industry, we reasoned, and we decided to make an informal investigation to learn just which categories of textiles would benefit from America's desire to stay busy and away from psychiatrists.

Boating, we learned, requires canvas covers, sails, canvas sneakers, sun caps, and T-shirts. If you own a yacht, no doubt you'll want a blue blazer and tropical worsted flannels. And your wife may insist on wall-to-wall carpeting.

Bowling as a market for textiles is equally good. There are some 27 million bowlers, according to the newspaper item, and they certainly will require slacks, shirts, and athletic socks beyond their normal needs. There is also a market here for non-woven toweling, too.

The textile needs of the fishing industry and of the pastime itself are quite obvious, particularly for fish lines and netting, not to mention the extra items of apparel not normally required.

We were doing fine until we came to the last activity, movie-going. After much thought, we simply could not see how this activity (or inactivity) can benefit the textile industry. It seems that you just don't dress for the movies, as you do for the theater or the opera. Of course the movies do benefit the pop-corn industry, but maybe we have a field here where some market research can open up new vistas for textiles.

Miscellaneous Requests

Who makes the door gaskets shown on page 191 of TI for Sept.?—**J. P. Jones,** industries purchasing, Burlington Industries, Inc., Greensboro, N. C. They're made by C. M. Gibbs Co., Syracuse, N. Y., from 16-oz neoprene-coated nylon supplied by the Vulcan Rubber Products Division of Reeves Bros., Inc., New York, N. Y.

Samples of the "gag" labels shown in S & R for Sept.—**C. Raymond Kenyon,** asst. v-p, The Lion Knitting Mills Co., Cleveland, Ohio; and **D. R. Hunter,** Owens-Corning Fiberglas Corp., Huntingdon, Pa. They're distributed by Bengor Products Co., of New York.

More information on Alabama TOE discussion report—**H. Attenborough,** William Yates & Sons Ltd., Manchester, England.

Gardner-Denver piston and rotary air hoists

Only Gardner-Denver offers lightweight overhead air hoists for *both* the "work horse" and "race horse" jobs. Axial-piston hoists provide rugged, dependable operation with the control demanded for precise spotting. That's why hundreds of industrial plants rely on this Gardner-Denver hoist. New rotary air hoists are designed for use where the combination of speed and ruggedness is of primary importance—up to 90 fpm in 500-lb. capacity.

Popular models available from 150-4000 lb. Sparkproof construction and pendent control available.

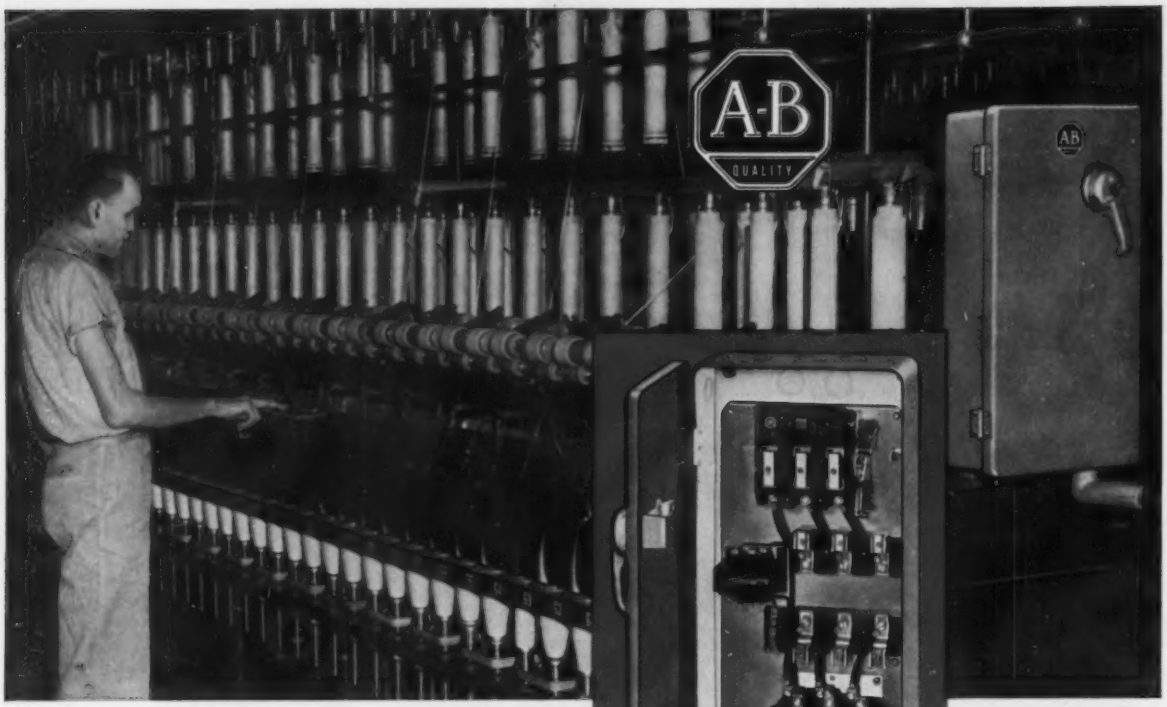
PISTON HOISTS				ROTARY HOISTS			
MODEL	CAPACITY	SPEED	WEIGHT	MODEL	CAPACITY	SPEED	WEIGHT
86-1V10	1000	19	28	86R-5	500	90	27
86-2V20	2000	19	78	86R-10	1000	40	27
86-2V40	4000	10	100	86R-20	2000	20	30

EQUIPMENT TODAY FOR THE CHALLENGE OF TOMORROW

GARDNER-DENVER

Gardner-Denver Company, Quincy, Illinois

Branch Offices: Atlanta, Ga.; Birmingham, Ala.; Knoxville, Tenn.; Washington, D. C.; Teterboro, N. J. (New York Office); Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.; Louisville, Ky.



The best motor control for textile mill service

ALLEN-BRADLEY
Combination Starters

You'll have complete protection at "lower installed cost" with Allen-Bradley Bulletin 712 combination starters—plus a neater job than with a separate starter and disconnect switch.

Here are the features you get. The Bulletin 712 has starter and disconnect switch in one enclosure, and the cabinet door cannot be opened unless the disconnect switch is OPEN—and the starter is "dead." When the switch is open, all three movable contacts are *plainly* visible—you can *see* that all the lines are open. Also, the incoming terminals are protected with an insulating shield—there's no chance of accidental contact with a "hot" lead. In addition, the handle can be locked ON or OFF with up to three padlocks of any type.

In addition, the quality finish of A-B starters assures positive protection against the exceptionally humid atmospheres in textile plants.

For the best in motor control—insist on Allen-Bradley combination starters for your textile plant.

Allen-Bradley Co., 208 W. Greenfield Ave., Milwaukee 4, Wis. In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

BULLETIN 712, Size 3 equipped with fuse clips and fused control circuit transformer. Made in ratings to 100 hp, 220 v; 200 hp, 440-550 v. Bulletin 713 with I.T.E. instantaneous trip circuit breaker. Made in ratings to 250 hp, 220 v; 500 hp, 440 v; 600 hp, 550 v.

A-B makes a complete line of Quality Starters for the Textile Industry

Loom Motor Starting Switch with toggle action—Bulletin 1209. Enclosure excludes lint. Available with pedestals.

Automatic Across-the-Line Starter—Bulletin 709 Solenoid Starter with accurate overload protection. Made in nine sizes.

Manual Stepless Resistance Reduced Voltage Starter—Bulletin 640. Acceleration is under control of operator.

Automatic Resistance Starter for velvet smooth starting at reduced voltage—Bulletin 740. Adjustable to exact load.

Automatic Autotransformer Reduced Voltage Starter—Bulletin 746. Starting voltage and accelerating period are adjustable.

ALLEN-BRADLEY QUALITY MOTOR CONTROL

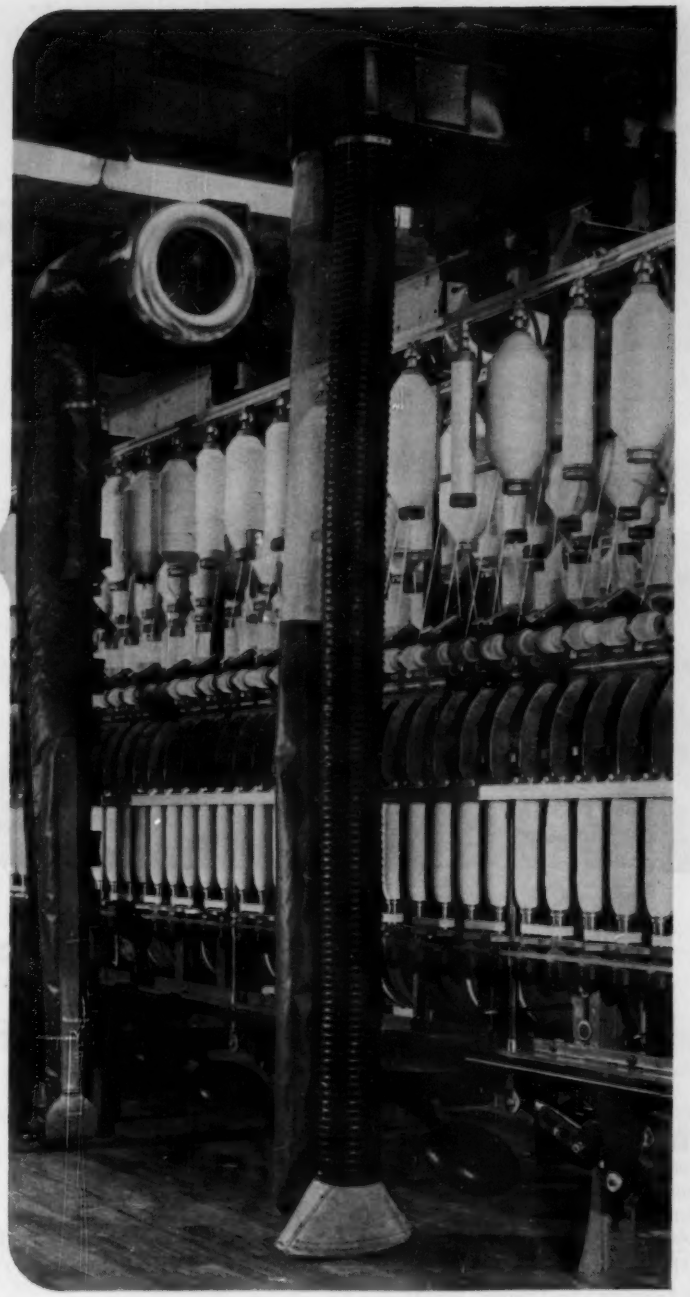
Get peak cleaning efficiency on frames, underframes, overhead and alley areas with

COMPLETE COVERAGE FEATURES

of CROSS-JET FRAME CLEANER

and VACU-PAK FLOOR SWEEPER

with automatic "Stop and Go" protection



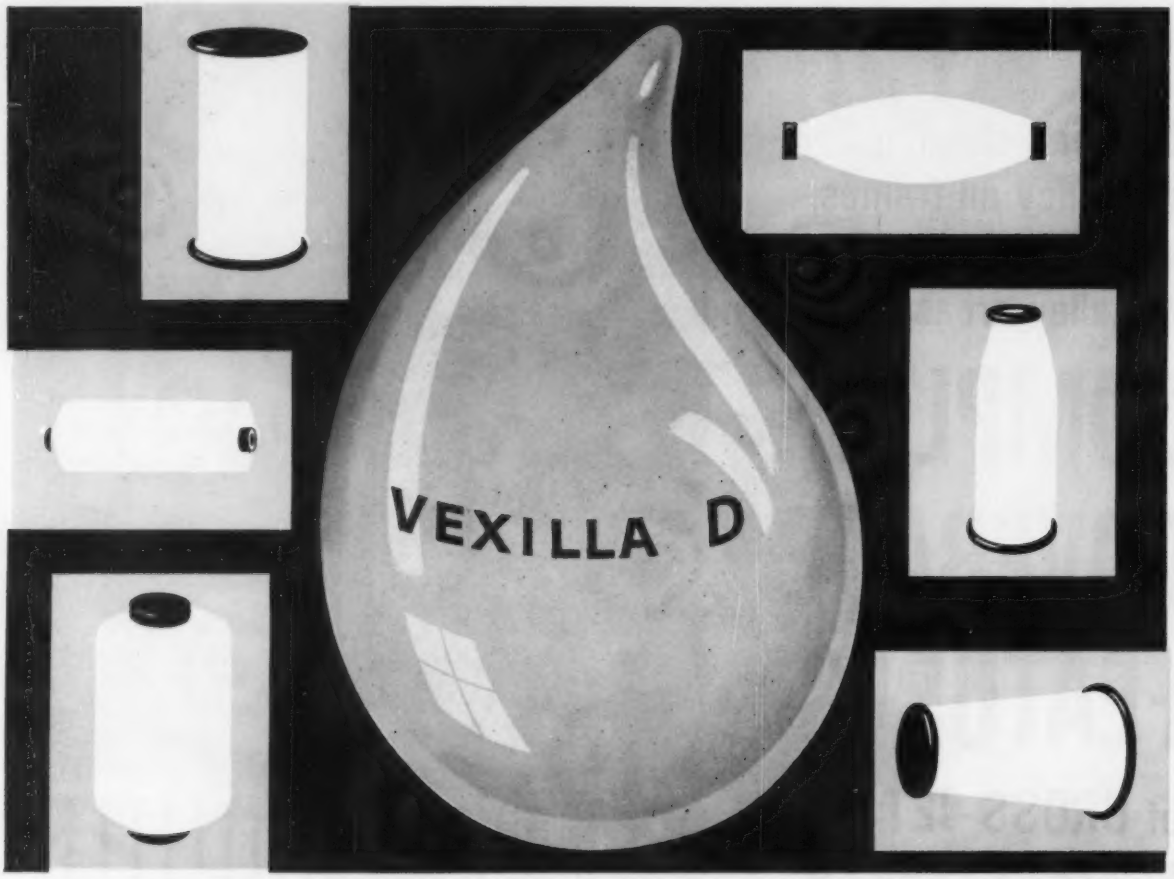
Sweeper automatically stops on contact—then automatically re-starts when free of obstruction.

1. Provides protection to frame and spindles from trunk swinging free of obstacles and back into frame.
2. Provides protection for operator to work efficiently without interruption by traveling trunk.
3. Provides protection against damage to trunk by obstacles in its path.
4. Provides protection against accidents and operating time loss.

Bahnson

AIR-O-MATION

THE BAHNSON COMPANY · WINSTON-SALEM, N. C.



NEW *DISPERSANT* SPINDLE OILS

for COTTON—WOOL—SYNTHETICS

1. Increase Production. Shell Vexilla D Oils, because of their high film strength and lubricity, permit full-speed operation with heavy packages. They also insure complete lubrication protection to bearings, whether sleeve or anti-friction type.

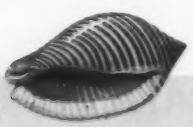
2. Improve Yarn Quality. Vexilla® D Oils will not thicken or gum up like ordinary oils. They constantly cushion spindles against vibration . . . eliminate hunting and logging . . . thereby reduce chafing and assure smoother, more uniformly twisted yarn.

3. Reduce Power Consumption. Vexilla D Oils lower frictional drag in both starting and running.

4. Reduce Spoilage. Vexilla D Oils will not atomize and fog-damage yarn on nearby spindles.

5. Increase Savings . . . especially when processing synthetic yarn. Since Vexilla D Oils have built-in emulsibility, any yarn stained during spinning and up-twisting can be salvaged.

Regardless of the spindles you use, you can expect improved performance with new Shell Vexilla D Oils. Ask the Shell Industrial Products Representative to assist you in selecting the proper grades for your plant. Or write for Technical Bulletin to Shell Oil Company, 50 West 50th Street, New York 20, New York. In Canada: Shell Oil Company of Canada, Limited, 505 University Avenue, Toronto 2, Ontario.



An interesting fact! Every Shell Branded Industrial Lubricant is named for a sea shell. Shown here is the Vexilla taeniata.

NEW

SHELL VEXILLA D OILS

. . . heavy-duty dispersant textile machine lubricants

SHELL

Cut dyehouse reruns and seconds up to 25% by using Morton Chemical Grade '999' Salt!

Records show when dyers switch from average purity salt to high purity Morton Chemical Grade '999', reruns and seconds drop from an average of 8.7% to an average of 5.5%. Colors are truer, reruns are fewer with Chemical Grade '999'. In fact, many dye manufacturers use Morton Chemical Grade '999' Salt in standardizing their dyes before they are sent to you!

With salt of average purity, calcium and magnesium compounds complex dyes and reduce their effectiveness. But with high purity Chemical Grade '999' Salt, you get the all sodium salt—99.95% pure sodium chloride with a trace of sodium sulphate—that is recommended whenever commercial calcium free salt is required.

Available in 100-lb. bags or bulk, Chemical Grade '999' is ideal for direct salting and brine. It leaves no accumulation of insolubles that necessitates costly brine system cleanouts.

Morton offers intermediate grades of salt, too. In addition to Chemical Grade '999', Morton produces several other grades of high-purity salt for textile use. As the only nationwide salt company, Morton can supply the kind of salt and service you require, regardless of your size, location, or type of operation.

MAIL COUPON TODAY FOR MORE INFORMATION

☐ *Please send more information about Morton Chemical Grade '999' Salt.*

☐ *I would like to talk with a Morton representative about the other intermediate grades of salt Morton offers the Textile Industry.*

Name_____
(please print)

Title_____

Company_____

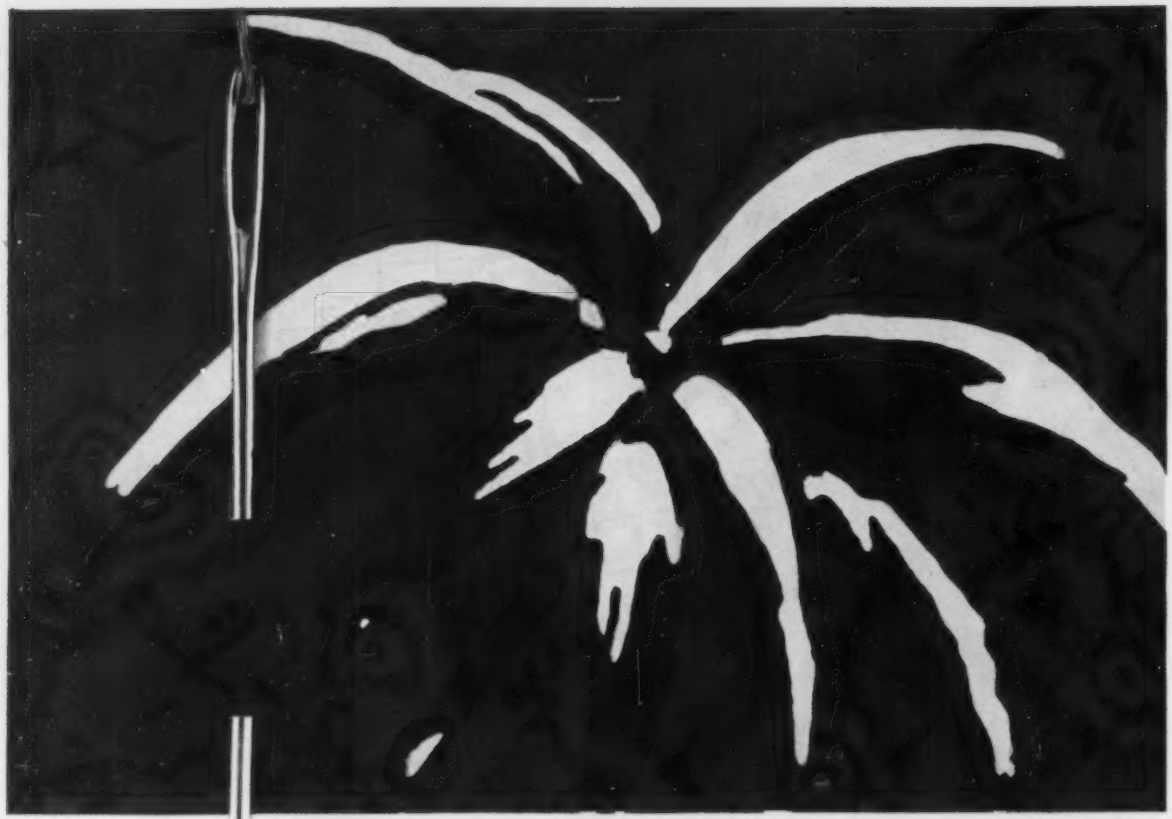
Street Address_____

City_____ Zone____ State_____

MORTON SALT COMPANY

INDUSTRIAL DIVISION

Dept. TI 11, 110 No. Wacker Drive, Chicago 6, Illinois



with
Naphthols
Vats
Sulfurs
Pigments

BLANDOFEN®

NONIONIC POLYMER EMULSIONS

give better finishes with increased fastness to wet and dry crocking

BLANDOFEN AC and **SL** in combination offer textile finishers a series of outstandingly effective anticrock agents for colored cottons and rayons, either alone or in blends with today's popular synthetic fibers. Together, these Blandofen products are particularly valuable for fabrics colored with naphthols or pigments.

BLANDOFEN combination finishes also add softness and a full appealing hand to textiles. No other softener, wax, or lubricant need be used with the Blandofen emulsions on either dyed or printed fabrics.

Although Blandofen AC contributes greatly to the prevention of crocking, Blandofen SL is necessary to provide the required plasticizing effect. Both agents are compatible with textile brighteners.

BLANDOFEN SL, also by itself, is an excellent textile softener. It is nonyellowing and is used to eliminate needle cutting, increase tear strength and abrasion resistance, improve the draping qualities of fabrics.

BLANDOFEN polymer emulsions are available in carloads, truckloads, or single drums. BLANDOFEN SL is also supplied in bulk. Write or call any Antara office for Blandofen samples, information, and technical assistance.

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From Research to Reality

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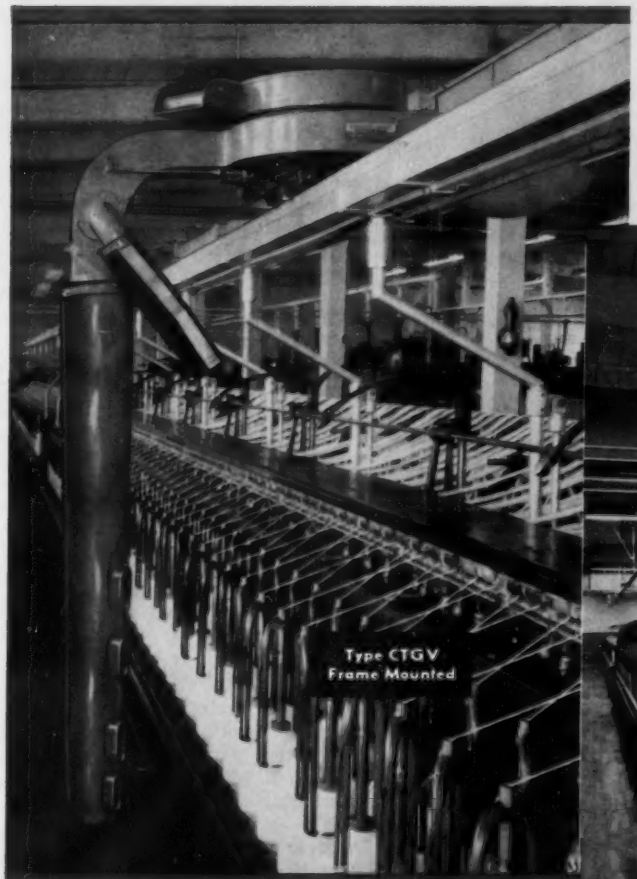
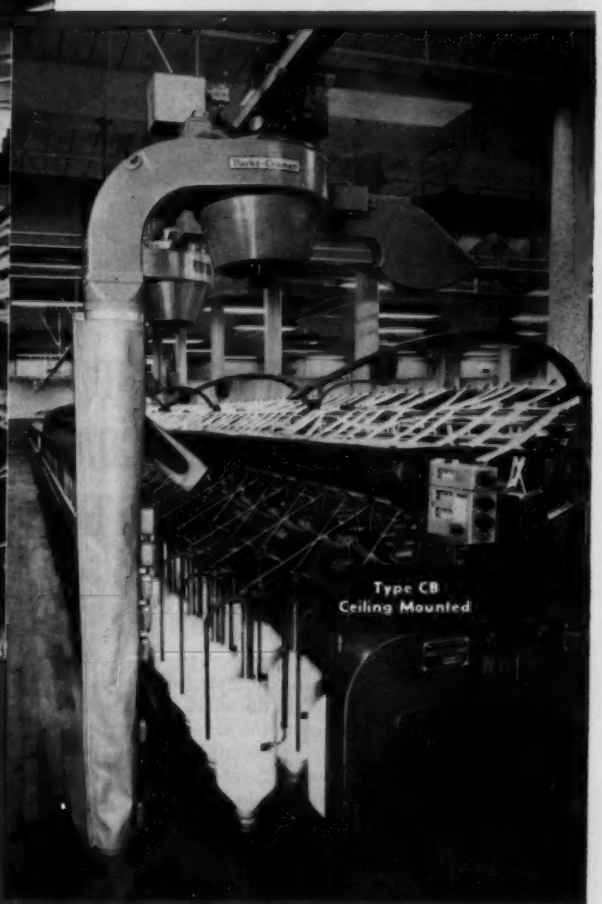
435 HUDSON STREET • NEW YORK 14, N. Y.

SALES OFFICES: New York • Providence • Philadelphia • Charlotte • Chattanooga • Chicago
Portland, Ore. • San Francisco • Los Angeles. IN CANADA: Chemical Developments of Canada Ltd., Montreal

Parks-Cramer Roving Frame and Room Cleaners

Types CTGV and CB





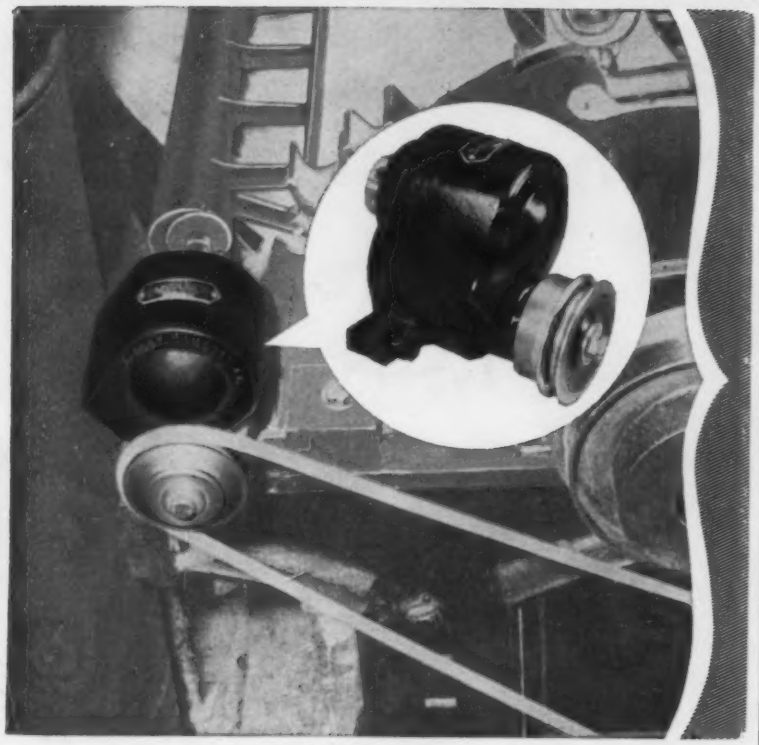
For creel area, frame and overhead surfaces

- Gentle air velocities for creel areas.
- High air velocities for front frame, under carriage and ceiling.
- Instantaneous automatic dampering of frame cleaning during doffing, creeling and end piecing.

Send for Bulletin X106

Parks-Cramer Company

FITCHBURG, MASS. · CHARLOTTE, N.C. · ATLANTA, GA.



OUTSTANDING SUPERIORITY OF SOUTHERN STATES COMB BOXES PROVED IN NATION'S MILLS

More than 55,000 Southern States Comb Boxes have been placed in service during the past 12 years—equal to 62% of all the nation's cotton cards. Many mills have changed over 100%.

This overwhelming acceptance proves conclusively that mills can easily justify the small investment. Cardroom overseers quickly recognize the savings that result from their use: no oiling, cleaning or maintenance for the life of the unit; steady, even strokes to drive the comb with perfection; elimination of hot-running, leaky, rattling old-style boxes and their headaches.

Southern States Comb Boxes are furnished complete with an adjuster base for mounting on any make of cotton card. Bases are double tapped to permit rapid mounting on either right or left hand cards. Installation is quick and easy.

Let us show you with facts and figures how it has paid hundreds of mills to install Southern States ball-bearing, sealed-for-life, Comb Boxes; prove how much they will save you in one year. Write direct for a representative to call at your convenience.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

PERSONAL NOTES

Jimmie Morris Hester has joined Callaway Mills Co. as trainee and has been assigned to the Elm City plant. * * * **Wendell Oliver McGowan** is a trainee in the research and development division. * * * At the Hillside plant, **James Whitney** is a new trainee.

Vincent B. Wright, Jr., of North Carolina Finishing Co., has been named chairman of the Piedmont section of the American Association of Textile Chemists and Colorists. Other officers elected were: vice-chairman—**Richard E. Rettew,** of Polymer Southern; secretary—**E. Phillip Lavoie,** Wica Chemical Co.; reelected treasurer—**Robert L. Ward,** Leaksville Woolen Mills.

Lee R. Head, Jr., has been appointed personnel and industrial relations director for Pendleton Mfg. Co. of LaFrance Industries.

John C. Andrews has been promoted to director of purchasing for the Bates Manufacturing Co., and **William E. Murphy** has been named purchasing agent.

Roger Milliken has been elected a director of Arthur D. Little, Inc.

H. A. McKew has assumed duties as superintendent of the Cartersville, Ga., plant of The Goodyear Tire and Rubber Co. Mr. McKew succeeds **W. E. Floyd,** who has retired.

Frank D. Dodds has resigned as president of Artloom Carpet Co., and as an officer and director of the parent company, Trans-United Industries, Inc.

Elliot B. Grover, John R. Aspland, George T. Davis, Gerd N. LaMar, Volker D. Arendt, and **Jonathan B. Rivlin,** regular graduate students at Princeton University working toward their doctorate degree in the department of chemistry, chemical engineering, or mechanical engineering, have been appointed new Research Fellows by Textile Research Institute for the academic year 1960-61.

The student's thesis research is performed in the TRI laboratories under the supervision of a member of the faculty of Princeton University.

Jack Udis, a vice-president of Reeves Brothers, Inc., has been appointed head of the grey goods department. **Tobe Garrett** and **William Ariail** have been named to assist Mr. Udis. Mr. Garrett will handle grey goods for the Eagle & Phenix Mills, and Mr. Ariail will have similar responsibilities with the mills in the Spartanburg area.

George Asnip has been named chairman of the executive committee of the board of directors of the National Association of Wool Manufacturers. Mr. Asnip is vice-president and general manager of Excelsior Mills, Inc., worsted division.

Harry Moore has been named to the newly created position of technical sales coordinator for Burlington Finishing Co., a division of Burlington Industries, Inc. In his new post, Mr. Moore will act in a liaison capacity between customers and Burlington Finishing Co. plants. • • • **James S. Rotan** has been named vice-president of Catlin Farish Co.

Paul A. Rogers has been promoted to manager of the Pacific-Columbia division of M. Lowenstein & Sons. • • • **Pratt Ellington,** who has been associated with the Huntsville (Ala.) Mfg. Co., has been transferred and promoted to general superintendent of the Pacific-Columbia Mills.

Raymond Charlebois has been named manager of industrial relations for Dominion Textile Co., Ltd., Montreal, Canada. **Francis P. Brady** has been appointed assistant to the vice-president of manufacturing. • • • **Robert W. Kolb,** assistant plant manager, has been named to succeed Mr. Charlebois as manager of the Drummondville, Quebec, plant.

Richard L. Meader has assumed duties as general manager of the Carleton Woolen Mills of Maine, Inc., Winthrop, Maine.

R. Carter Henry, formerly assistant general manager of six plants in the cotton division of J. P. Stevens & Co., Inc., has joined Edgar M. Norris & Co., as investment advisor.

William J. Miles, formerly associated with Deering-Milliken Research Corp., has been appointed technical

Continued on page 34

SOUTHERN STATES CD-2 CARD DRIVE COMBINES INTO ONE UNIT ALL OF THE FEATURES WANTED FOR COTTON CARDS

Here is why we honestly believe the Southern States CD-2 Card Drive is the safest, simplest, most efficient individual drive on the market today:

Finger-tip control. No changes in operating procedure. Unit is controlled by simple clutch lever in both starting and hand stripping.

Full speed in seconds. A 1½ hp high torque card motor brings card into full operation, seconds after clutch is engaged.

Safety engineered. All belts and moving parts are covered. Starting and idling is accomplished by simple clutch lever.

Rugged construction. The entire unit is built for heavy-duty service: steel main stand; cast iron jackshaft bracket and main pulley; cast aluminum cover. Ball bearing throughout.

Easy installation. Fits any cotton card. Minimum number of holes to drill in frame. Drive pulley, collar and clutch are preassembled and slip on to shaft using existing keyway.

Get the facts from your Southern States representative or write for Bulletin 301-a.

SS **SOUTHERN STATES**
EQUIPMENT CORP.
HAMPTON, GEORGIA

A Southern textile mill faced a problem: how to keep oil in loom bearings, where it was wanted, and off the cloth, where it wasn't. The oil being used dripped, spoiled fabrics, and cut profits.

A Sinclair engineer recommended Sinclair NO-DRIP #15, combining a light-colored base oil for lubrication with special thickening agent to resist drip and throw-off. Now, cloth spoilage has been cut to a minimum, and lubricating costs reduced by one third. Let Sinclair solve your problem, too. Call your local representative or write

Sinclair

SINCLAIR REFINING COMPANY

TECHNICAL SERVICE DIVISION • 600 FIFTH AVE., NEW YORK 20, N.Y.

Demonstration: RHOPLEX at work in modern textiles

This is a picture of RHOPLEX acrylic resins doing six important jobs.

RHOPLEX gives improved crease-resistance and strength properties to the dress fabric. RHOPLEX holds the fibers of the coat's pile lining secure through repeated washing and dry cleaning. The RHOPLEX backing prolongs the life of the chenille rug . . . withstands sunlight, washing and hard use.

In the dress, RHOPLEX is an efficient anti-crock for the pigment colors. RHOPLEX backs the upholstery fabric. And finally, a wash-resistant RHOPLEX binder holds and protects the fibers of the non-woven interlining of the coat.

For more information about these and the many other ways RHOPLEX resins can serve you, write to Rohm & Haas today. Get the benefits of Rohm & Haas' experience in pioneering and perfecting acrylic products for the textile industry.

RHOPLEX is a trademark, Reg. U. S. Pat. Off. and in principal foreign countries.

Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

RHOPLEX

— outlasts other roll covers 100% in most cases

–25% longer life between grindings reported by users

SEALSKIN®

SLASHER ROLLS for uniform sizing

• *Bulletin S gives complete SEALSKIN application information.*

developed and production-proved by

STOWE-WOODWARD, INC.

Newton Upper Falls, Mass.

Neenah, Wisconsin

Griffin, Georgia

On the West Coast • HUNTINGTON RUBBER MILLS, INC. — Seattle, Washington • Portland, Oregon • Port Coquitlam, British Columbia, Canada

"How to Get Longer Life from a Rubber Covered Roll" — will be sent to you upon request.

THE GENTLE MEANS OF CONTROL FOR STOP-AND-GO MACHINES!

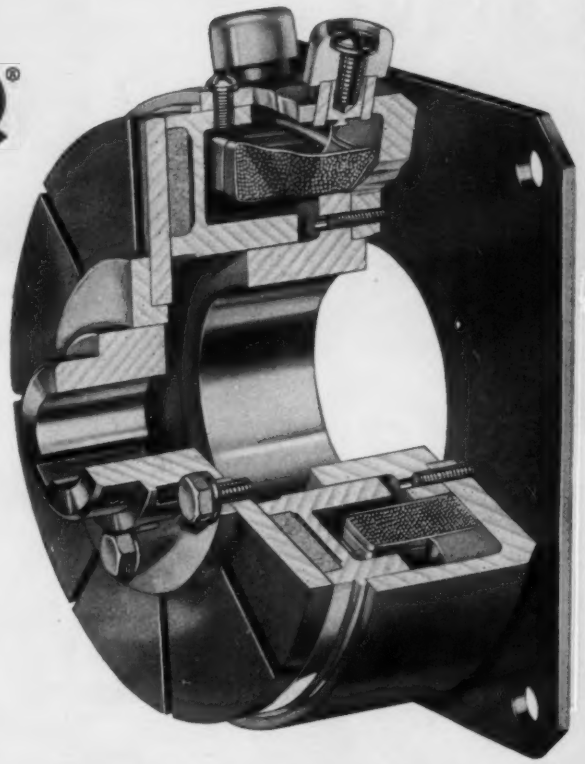
EATON DYNA-TORQ® Magnetic-Friction Clutches and Brakes

Eaton Dyna-torQ Magnetic-Friction Clutches and Brakes provide a simple, accurate, shock-free method of controlling power and motion in today's complex production and processing machines—or for equipment you may now have in the design stage.

Dyna-torQ units utilize the simple principle of electro-magnetic engagement of two friction members (field-magnet and armature) to transmit driving or braking torque.

Extremely rapid response without backlash or chatter makes Dyna-torQ units ideally suited to a wide range of automatic cycling applications.

Carefully selected and tested materials, high quality of workmanship, and important design features provide long operating life, minimum down-time, and low maintenance cost.



Dyna-torQ units are offered in a diversified line including clutches, brakes, clutch-brakes, and clutch couplings. Sizes range from 1½" to 15" in diameter. They are easily and quickly installed on new machines or existing plant equipment.

INSTANT RESPONSE: Short armature travel—1/32"—and the direct pull of the magnetic field on the armature eliminate any need for mechanical linkage; prevent backlash and lost motion.

INSTANT RELEASE: Dyna-torQ design permits instant release of armature when field coil is de-energized; there is no residual flux to delay action.

HIGHLY EFFECTIVE COOLING: Fanning action of armature carries heat away from unit; reduces operating temperature.

NO ADJUSTMENT: Proper clearance between the armature and field magnet is maintained automatically.

SIMPLE, ACCURATE CONTROL: Closely held rate of acceleration and deceleration prevents shock to gear trains and other linkage. Small, compact Dyna-torQ controls rectify alternating current to furnish direct current for the coil of the field magnet assembly.

INTERCHANGEABLE PARTS: Corresponding parts of all Dyna-torQ units of a given capacity are interchangeable.

Send for Illustrated Literature Covering the Complete Dyna-torQ Line

EATON DYNAMATIC DIVISION
MANUFACTURING COMPANY
3122 FOURTEENTH AVENUE • KENOSHA, WISCONSIN

ORIGINATORS OF EDDY-CURRENT SPEED CONTROL EQUIPMENT

Sonoco convolute tube production.

Get top efficiency with Sonoco convolute tubes!

To produce yarn tubes or cloth cores which assure trouble-free operations, experience is a "must"—*and Sonoco has it*—plus the proper raw materials and equipment. What's more, Sonoco tubes are designed and manufactured to meet the customer's most exacting requirements.

Because of the superior characteristics, sometimes a Sonoco precision-made tube may cost more than an ordinary paper tube. In the long run, however, use of the Sonoco tube will result in production economics that can far exceed any small initial price differential.

Sonoco convolute tubes are typical of the dependable products manufactured by a fully integrated company with 60 years' experience in creating and producing all types of paper textile carriers. *Only Sonoco,* in its field, provides the necessary knowledge, skill and capacities to meet the ever-changing techniques of the textile industry. *Let Sonoco experience help you!*

SONOCO
Products for Textiles

SONOCO PRODUCTS COMPANY, HARTSVILLE, SOUTH CAROLINA • Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Holyoke, Mass. • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Calif. • Fremont, Calif. • Atlanta, Ga. • Richmond, Va. • Brantford, Ontario • Granby, Quebec • Mexico City

1264

Picker Overhauling Is Simple When You Depend On . . .

Aldrich Repair Service

We furnish skilled men for reworking pickers, and can deliver to these men any needed parts within 24 hours in most southern states, and within 48 hours to almost any cotton mill in the United States. This makes thorough overhauling a simple matter. Anything needed for a good job can be had at once, while the machine is down for repairs.

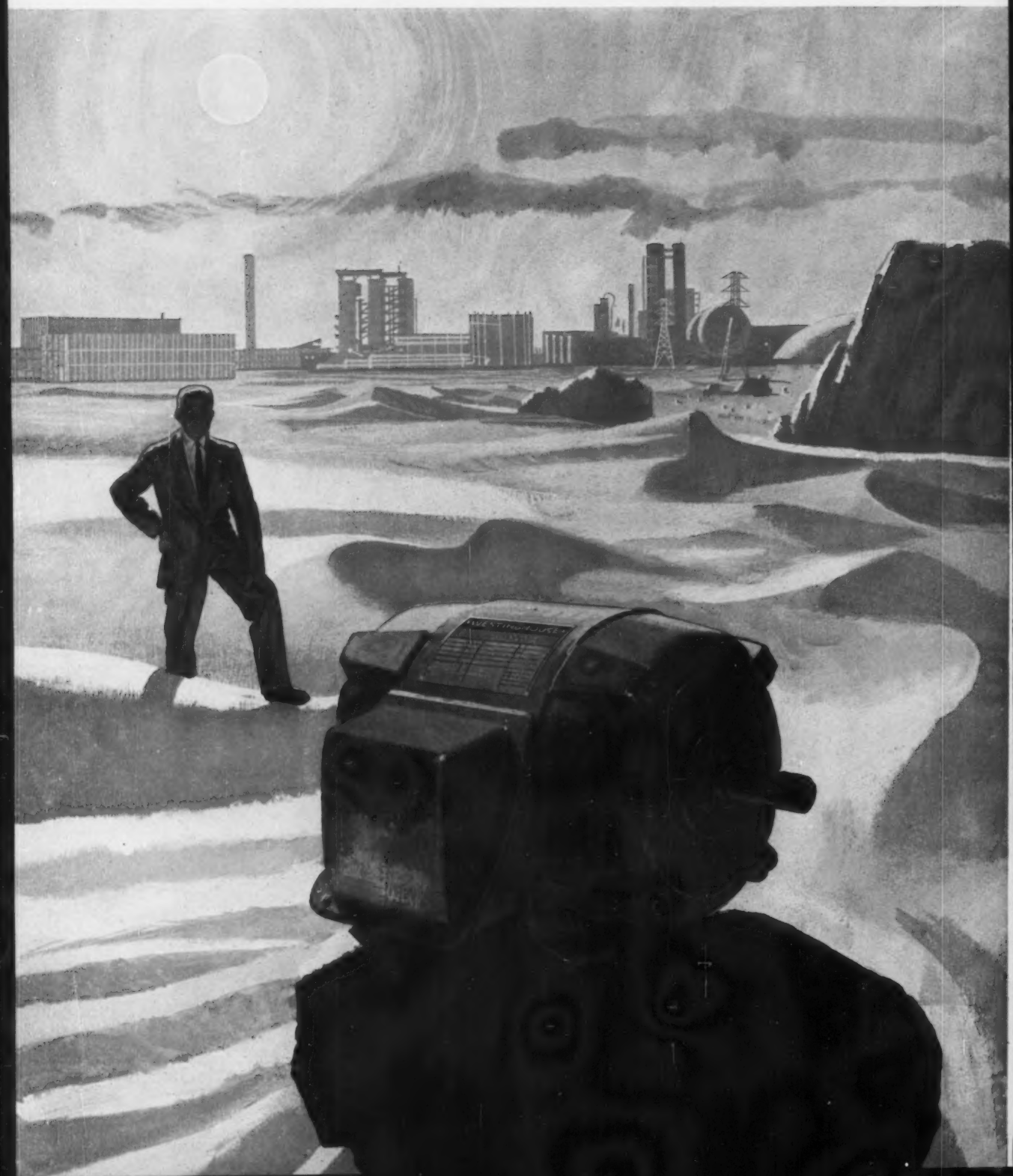
If you do your own overhauling, this speedy delivery service is just as valuable. You don't have to wait for repair parts — they are there when you want them.

We manufacture and install complete blending, opening, and picking systems for cotton and synthetics, and cleaning systems for cotton.

Aldrich Machine Works

Greenwood, South Carolina

NEW WESTINGHOUSE *Guardistor*



MOTORS LET YOU USE ALL THE HORSEPOWER YOU PAY FOR...SAFELY

The man and the motors from Westinghouse now provide absolute protection against motor failure caused by excessive heat . . .

Our Engineering Manager says:
"With the breakthrough development of the Westinghouse Positive Temperature Coefficient thermistors, for the first time we can provide inherent protection against motor failure caused by excessive heat. The solid-state thermistors buried in the windings instantly sense excessive heat from any cause and simultaneously warn of trouble or automatically take the motor off the line. Thus, motor protection is placed where only true motor protection can be . . . in the windings."

Our Marketing Manager says:

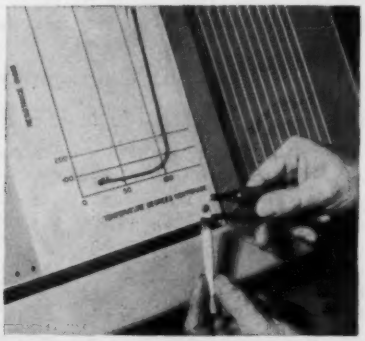
- "You can match the motor to the load . . . use all the motor you are paying for.
- Provides positive protection based on winding temperature . . . *not* load current and/or power supply fluctuations.
- Eliminates time and expense of changing winter-summer heaters. No nuisance tripping, it's fail-safe . . ."

Call your Mr. Westinghouse for the application of a Guardistor* motor to your drive requirements . . . write for *Questions and Answers About . . . Guardistor* (B-7876). Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. You can be sure . . . if it's Westinghouse.

*Trade-Mark

J-22160-R

Unlike remotely located sensing devices, PTC thermistors are buried in the windings of the Guardistor motor, instantly equating all temperature factors.



Ever alert PTC thermistors constantly totalize temperature, statically triggering an action *only* if critical temperature is reached.

MOTOR & GEARING DEPARTMENT

Westinghouse

PERSONAL NOTES

(from page 25)

superintendent of the weaving operation of Abbeville (S. C.) Mills Corp. • • • **Dorsey Sheppard** has accepted the position of plant superintendent of the weave plant.

Charles C. Gadsden has been named to the newly created post of director of personnel services at Indian Head Mills.

Schlegel Mfg. Co. has announced the appointment of **Frank R. Rochow** as plant manager of that firm's 55,000-sq-ft narrow-fabrics factory in Chester, S. C. **Charles L. Jordan** is assistant manager.

Mr. Rochow

Mr. Jordan

Stanley A. Wilson has been promoted to vice-president of Rice Mills, Inc., Belton, S. C.

Forrest Drum has been appointed vice-president for mill operations for the Betterwear Hosiery Mill, Inc., Catawba, N. C.

George L. Hodges, Jr., has accepted the position of superintendent of Climax Spinning Co., Belmont, N. C.

Paul Bowie has been named manager of the Liberty plants of Woodside Mills, Inc., and **Harold Brissey** has been named superintendent. • • • **J. Clifton Plowden, Jr.,** has been named secretary.

At a recent meeting of the board of directors of Kimberly-Stevens Corp., **Joseph H. Sutherland** was elected chairman of the board. Other officers elected were: president and a director—**H. T. Rindal;** vice-president of merchandising and sales—**William K. Saunders.**

Murray Feldman has been named to head the newly established men's wear selling division of Fair-Tex Mills, Inc.

John W. Brownley has been elected vice-president of manufacturing for Industrial Rayon Corp.

Leo Adams has been appointed plant manager for the new plant of Terafilm Corp., an affiliate of Acme Backing Corp.

John L. Dugan, Jr., has been named industrial relations director for Chicopee Manufacturing Corp.

Geoffrey D. Roberts has joined Cone Mills Corp., as superintendent of the Proximity Print Works plant. Formerly associated with Joseph Bancroft & Sons, Mr. Roberts succeeds George Brandt, who has resigned.

W. R. Langford has been appointed to the position of treasurer of Caldwell Mills, Ltd., Iroquois, Ontario.

The Combed Yarn Spinners Association recently honored **Claude C. Dawson,** former textile executive who retired as executive director of

Continued on page 38

Does YOUR warper have . . .

• DENSITY CONTROL?
• UNIFORM SPEED CONTROL?

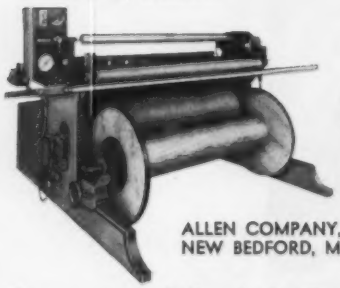
ALLEN MODEL "G", the modern warper with PATENTED HYDRAULIC CONTROL, gives you . . .

Uniform Density of Warp throughout entire build-up.

ALLEN PATENTED HYDRAULIC CONTROL maintains uniform pressure at all times between the beam surface and the pressor roll which drives the beam. The nip between this roll and beam is always at same distance and angle, so yarn tension is kept uniform. HARD-SHELL, SOFT-CENTER WARPS ARE POSITIVELY ELIMINATED.

Controlled Uniform Yarn Speed, variable at will.

ALLEN PATENTED HYDRAULIC CONTROL, maintains uniform pressure between beam surface and driving roll, assures positively uniform yarn speed—free from the abrupt jumps in speed experienced with now obsolete methods of constantly adjusting the drive speed in an endeavor to compensate for warp build-up. In addition, ALLEN VARIABLE SPEED DRIVE enables the operator to SELECT EXACTLY THE RIGHT SPEED FOR THE YARN BEING RUN. This means your ALLEN warper is always adjusted for MAXIMUM production consistent with QUALITY.



Don't put up with old-style warping!

Put this modern warper concept to work along with your other modern equipment. Time-proved, patented,—no other warper has these features.

ALLEN COMPANY, INC.
NEW BEDFORD, MASS., U.S.A.

Request Model G Brochure

ALLEN MODEL "G"

World's Most Advanced High Speed Warper

for Knitgoods Dyers . . .

PROCION

reactive dyes for COTTON and RAYON

PROCINYL

reactive disperse dyes for NYLON

level dyeing

versatile application

good wetfastness

good lightfastness

Quality PRODUCTS Integrity

ARNOLD, HOFFMAN & CO., INCORPORATED

55 Canal Street, Providence, Rhode Island • Est. 1815

A Subsidiary of Imperial Chemical Industries Limited, England

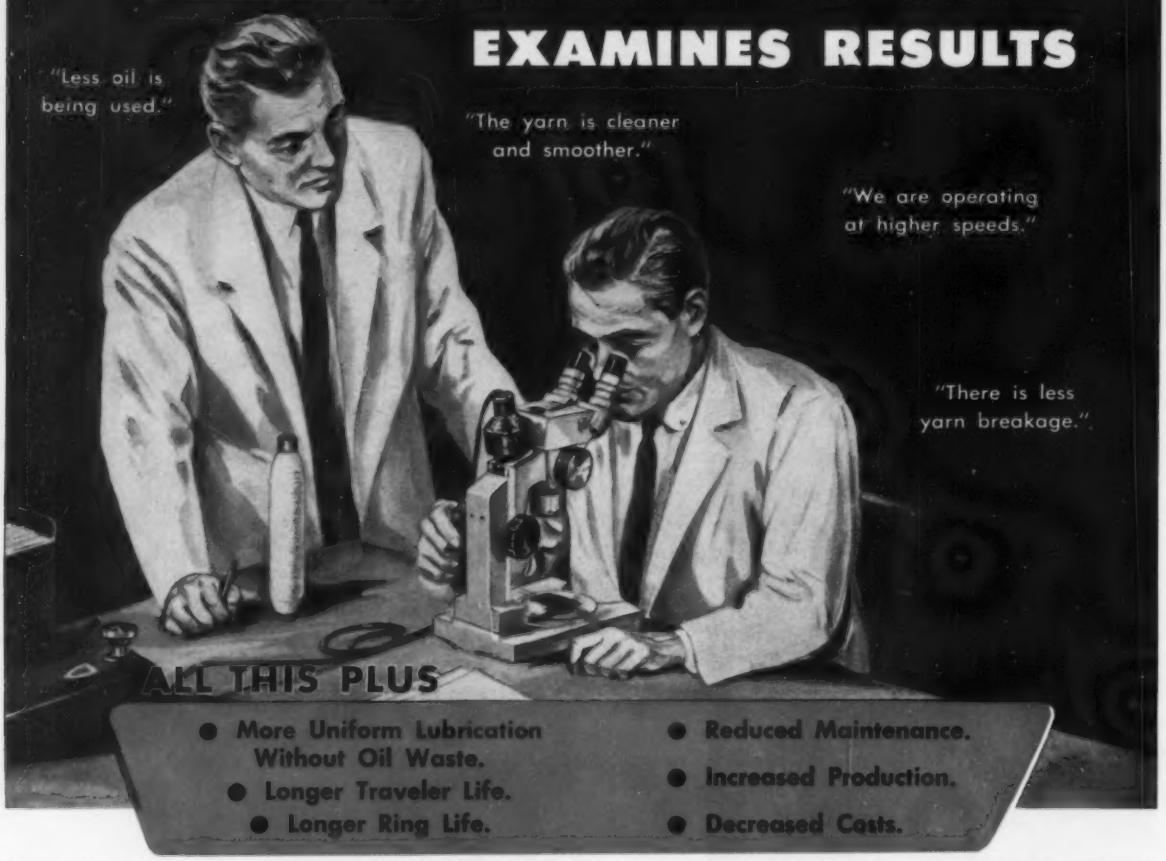
West Coast Representative: Chemical Manufacturing Company, Incorporated of California

ICI

Procion and Procinyl dyestuffs and the processes for their use and application to textiles are the subject of patents and patent applications in the U. S. A. Trademarks of I. C. I. Ltd.

523-9

A USER OF THE NEW "M" TYPE HERR CONICAL RING EXAMINES RESULTS



ALL THIS PLUS

- More Uniform Lubrication Without Oil Waste.
- Longer Traveler Life.
- Longer Ring Life.
- Reduced Maintenance.
- Increased Production.
- Decreased Costs.

Now, "M" Type Herr Conical Rings introduce a new method of lubrication called Seam Lubrication. By the principle of capillary attraction oil finds its way from the reservoir through the top and side seams to the wearing surfaces. The minute seams, so fine that they are hardly visible, control the amount of flow so that every drop of oil is utilized. There is no waste—no oil surplus to contaminate the yarn. The operation is clean. There is no rewicking. Maintenance costs are lowered. Oil consumption is greatly reduced, yet faster spindle speeds are possible without extra wear to ring or traveler.

The "M" type Herr Ring has been thoroughly tested for several years in some of the largest textile plants.

Write today. Let us give you all the facts that lead to greater profits for you.

Oil is Supplied to Both Top and Conical Bearing Surfaces Through Seams.

Oil Flows to Annular Reservoir Within the Ring, Then is Drawn by Capillary Action Through Seams.

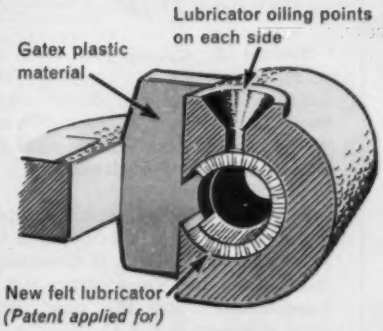
The 5" diameter 43/64" face Herr "M" Type Ring has only one oil cup. Herr travelers are specially designed to provide best results with this ring.

HERR MANUFACTURING CO., INC.

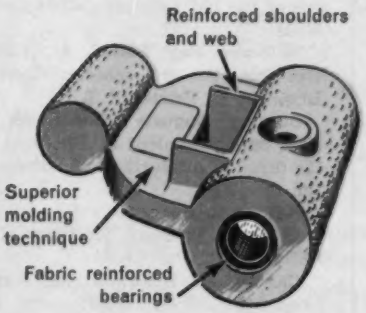
310 FRANKLIN STREET • BUFFALO 2, N. Y.

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES

Another product in Gates complete line of Textile Accessories



Exclusive new Gates features!



Latest advance
in plastic drop box pickers!

Less wear on picker bearings and spindle —New felt lubricator (patent applied for) stores oil and dispenses it at an even rate on the spindle rod . . . provides long-lasting lubrication . . . cuts lubricating time. New fabric-reinforced bearings reduce friction and heat and extend the service life of the Gates picker, reducing down-time and replacement costs.

Longer life for picker and stick — All stress points on the shoulders and web of the Gates picker have been reinforced and strengthened for the entire picker stick stroke. As a result there is a minimum of web and shoulder splitting and the picker lasts longer. The wider shoulder design also results in considerably longer picker stick life.

Greater picker impact strength — Gates reversible drop box pickers are made of new Gatex plastic—a dense material highly resistant to impact. They are formed through special molding techniques that eliminate internal stresses, increasing picker life.

These exclusive new Gates features, together, give you longer picker life, and reduced spindle rod and picker stick wear. For complete information, call your nearby Gates Distributor.

The Gates Rubber Company, Denver, Colorado
Gates Rubber of Canada Ltd., Brantford, Ontario

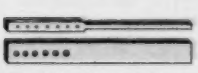
Take-up Roll Coverings
Card Bands
Cone and Evener Belts
Spinning Frame Drives

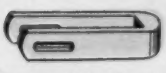
Gates Distributors are in the YELLOW PAGES

Gates®
The Mark of Specialized Research

Gates Textile Accessories

Tex-Hide and Vulco Loop Pickers


Tex-Hide Harness Straps


Thin-Tex, Vulco, Tex-Hide and SuperTex-HideLugStraps

4-in-1 Check Straps
Multi-Check Straps

TPA 904

OUR 90th YEAR
TENNANT

The Textile Industry's Most Widely Used

Floor Maintenance System

More than 1000 of America's largest textile mills now save money by using the **complete** TENNANT SYSTEM of floor care . . . consisting of TENNANT Methods, Materials, and Machines.

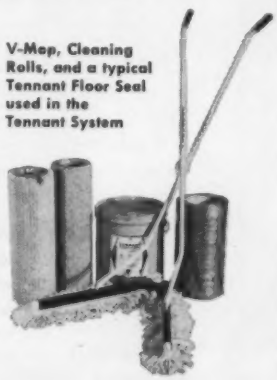
FOR HEAVY DUTY DRY CLEANING—TENNANT Heavy Duty Model E Floor Machine weighs only 95 lbs., yet cleans a 21″ path. Vacuum picks up dust and light soilage. Ideal for both wood and other textile mill floors. 1 hp electric motor. Larger machines also available.

Self-propelled Tennant Model E Floor Machine

Walk-behind Tennant Model 40-E Electric Sweeper

NO FUMES . . . NO NOISE . . . because the compact new Model 40-E Sweeper is also battery-powered. Cleans 34″ path, turns in its own tracks. *Sweeps 2 to 5 times faster than a man with a broom, yet does a far cleaner job.* Very powerful brush-and-vacuum system sucks fine dust into 2200 sq. in. filter. Outperforms any other sweeper its size for clean, dust-free work. Low priced. TENNANT Sweepers are also available in gasoline and LP-gas models. Larger rider-type models sweep paths up to 88″ wide.

OTHER FLOOR MAINTENANCE AIDS. TENNANT *heavy-duty* **Floor Seals** are easy-to-apply, attractive, long-lasting, non-darkening, take punishing traffic. **Cleaning Cylinders** (many types) on Floor Machine erase dirt, stains, scuff marks, and restore gleaming finish. TENNANT **V-Mop** has exclusive scissors action which allows it to spread to exact width desired . . . from 6″ to 57″. V-design triples load capacity without spilling. Available in 37″ and 57″ widths, expanded. **Channel Mop** has 3 removable 10″ sections; sweeps 30″ path. Weighs only 6 lbs.



V-Mop, Cleaning Rolls, and a typical Tennant Floor Seal used in the Tennant System

PERSONAL CONSULTATION. Your TENNANT Man is a qualified floor expert, ready to analyze your problem and give free estimate of savings possible in *your* mill.

WRITE TODAY *for illustrated bulletins and performance data. Or ask for survey of your floor.* G. H. Tennant Company, 735M N. Lilac Drive, Minneapolis 22, Minnesota.

FLOOR MAINTENANCE SYSTEMS

PERSONAL NOTES

(from page 32)

the association, by naming a textile scholarship for him. "The Claude C. Dawson Textile Scholarship Fund" will be appropriated from contributions by participants in the Quality Audit Program of the association and the School of Textiles of North Carolina State College. Samples used in the QAP testing are contributed by the mills and sold through a waste dealer, and proceeds will go to the scholarship fund.

Charles F. Mauney has assumed duties of general manager of Mauney Hosiery Co., and Carolina Throwing Co. Mr. Mauney succeeds **Sam H. Stalling, Jr.,** who has resigned to enter the insurance business.

Samuel A. Cooper has been appointed president of George W. Hepworth & Co., Inc., and its associated firms. Mr. Cooper succeeds **George W. Hepworth,** who remains as chairman of the board of directors.

J. Manley Phillips, assistant superintendent of the Greenwood, S. C., No. 4 and No. 5 plants of Greenwood Mills, Inc., has been promoted to superintendent of the new Sloan plant at Ninety Six, S. C.

OBITUARIES

W. Wendel Forrest, 73, president of Forrest Yarn Co., Lansdowne, Pa.

R. O. Cobb, 60, retired superintendent of the old Lafayette (Ga.) Cotton Mills.

Williams Ray Potter, 41, former vice-president and sales manager of Dixon Corp., Bristol, R. I.

Luthern Augusta Elmore, 68, retired superintendent of Rhodhiss (N. C.) division of Burlington Industries, Inc.

Nathan R. Burg, 56, a founder and partner in Triangle Knitting Mills, Philadelphia, Pa.

Charles H. Brownell, 82, former executive of Shaw Hosiery Co., Lowell, Mass.

Earl E. Hollenbach, 55, secretary of Penn Hosiery Mills, Inc., Reading, Pa.

Hyman H. Cohen, 67, founder of the Knitted Outerwear Manufacturers Assoc., Pennsylvania district, Philadelphia, Pa.

Abe Weissman, 70, chairman of the board of Allegro Knitting Mills, Inc., New York, N. Y.

Samuel S. Garmise, 55, manager, Draper loom filament fabrics dept. of the synthetic division, J. P. Stevens & Co., Inc.

THE DYER WHO SEES THE SANDOZ REPRESENTATIVE

. . . takes advantage of the broadest selection of dyes available.

. . . chooses a Sandoz dye with the necessary shade and fastness for every variety of stock, yarn, or fabric going through his dyehouse.

. . . relies on superb technical service — and gets his answer promptly whenever he needs help.

Call Sandoz. AL 5-1700, in New York City. District Offices in Charlotte • Cincinnati • Fair Lawn, N. J. • Hudson, Mass. • Los Angeles • Philadelphia. **Sandoz, Inc., 61 Van Dam St., New York 13, New York.**

CHOOSE FROM THESE OUTSTANDING SANDOZ SPECIALTIES

Alizarine Light colors — level dyeing acid dyes with good to excellent light fastness on wool and silk.

Alizarine Milling, Brilliant Alizarine Milling colors — for dyeing wool, nylon, or silk from a weakly acid bath. Extremely fast to light, and to mill processing; meet men's wear requirements.

Artisil* dyes—level, fast colors for acetate, polyamide, polyester and certain acrylic fibers.

Cuprofix* dyes—for good wet fastness on cotton and viscose. For improved fastness of anti-crease treatments.

Drimarene*-Z reactive dyes—for prints of bright shade and high wet fastness on cellulosic fibers. Unfixed portion of dye easily removed by washing. Excellent storage stability of printing pastes.

Drimarene*-Y reactive dyes—for padding bright shades on cellulosic fibers. Excellent stability, highly soluble; avoid tailing-off and migration effects. Unfixed portion of dyestuff simply and easily removed. Excellent reproductibility of shade.

Foron* ultra-dispersed dyes—for polyesters and blends. Excellent light, wet, perspiration, and abrasion fastness; minimal particle size.

Lanasyn* dyes—fast, neutral dyeing premetallized dyes for wool, nylon, silk, and acrylic fibers.

Lanasyn Brilliants—non-metallized dyes in bright shades, for use in combination with the regular Lanasyn dyes.

Lumicrease* dyes — fastest-to-light direct dyestuffs ever offered — a complete line of color.

Omega and Metomega Chrome dyes—for woolens and worsteds that meet the highest standards in men's wear.

Pyrazol* Fast dyes—direct colors for fastness to light and washing, offering maximum economy.

Sandonyl* dyes—for barre-free color on filament nylon; superior light and wash fastness.

Sandothrene Ultrasperse* Vat dyes — especially prepared for all types of dyeing; and, for printing, Sandothrene-M Vat dyes are recommended.

Vitrolan* colors—acid dyeing, premetallized dyestuffs giving good colorfastness on wool and various synthetic fibers—at moderate cost.

Xylene Fast colors—level dyeing on wool or silk, using sulfuric acid. Good selection for bright shades.

Xylene Fast "P" colors—combine good fastness to wet treatments with level dyeing on wool, nylon and silk from neutral or weakly acid baths. All have approximately equal rates of exhaustion and migration, and behave in combination as would a homogenous dyestuff.

Pigments — Printofix* resin bonded colors for textile printing and padding.

Chemicals—for brighter, whiter whites, Leucophor* BS Liquid optical brightener; or, in a bath with acid catalyzed resins, Leucophor ACR. For softening, Ceranine* HC softening agent. For level dyeing, Lyogen* P and Lyogen DK and SMK leveling agents. For efficient soil removal, Sandopan* DTC, the leading detergent for cotton and synthetics.

SANDOZ, INC., 61-63 VAN DAM ST., NEW YORK 13, N. Y. • ALGONQUIN 5-1700

*T.M. Sandoz, Inc.

SANDOZ

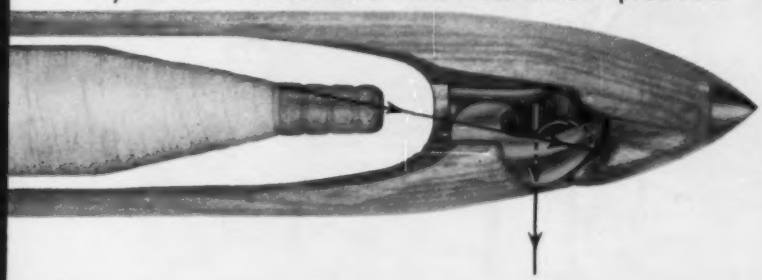
THINKS AHEAD WITH TEXTILES

SANDOZ

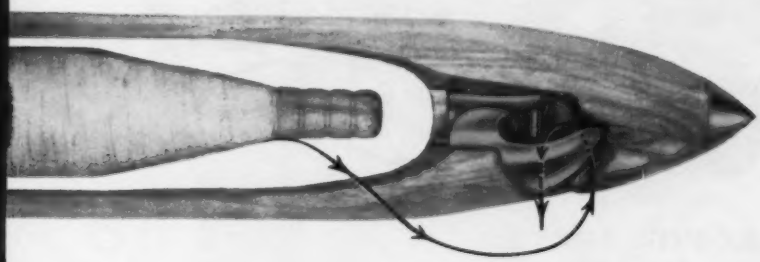
AT LAST!

THE SHUTTLE EYE THAT CAN'T UNTHREAD

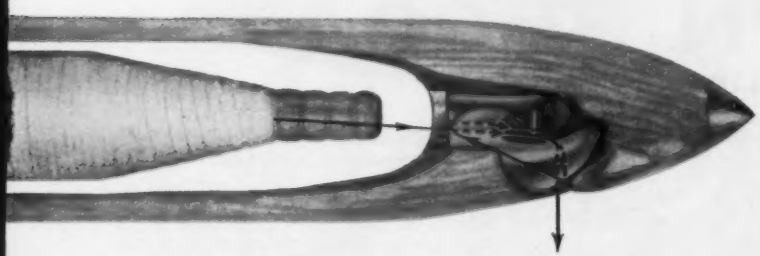
The #112 "McHargue" Eye just simply cannot let the yarn out, no matter how much it balloons, loops, twists and tangles. The Patented construction (U.S. Patent #2659395) keeps the yarn always within the eye, to fall back into normal position at the next pass of the shuttle. This eye was developed by mill men to overcome these most difficult problems.



Here are typical examples: When the eye is threaded, filling can be lifted completely out over top of the eye, and will rethread immediately.



With the yarn completely out over top of the eye, yarn can be "sawed" on hook and will not unthread. When filling is pulled it will fully rethread immediately.



Yarn can be fully looped on eye, around scroll point and hook, and it will rethread immediately at the next pass of the shuttle. Many other faults in yarn passage are overcome just as easily.

The #112 "McHargue" Eye has proved its value through years of testing in numerous high production mills, and is truly "worth its weight in gold." Order your next Southern Shuttles with the new Patented #112 "McHargue" Eye and see how quickly they will save you money by preventing down time and seconds from broken, twisted yarn. Or, ask one of our qualified Sales Engineers to show how you can effect savings and improve production.

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POLYVINYLIDENE CHLORIDE

RESYN 3600 is a water dispersed polyvinylidene chloride that promises a revolution in protective coatings and finishes. For the first time, it combines exceptional barrier properties with simple low cost application by sizing, padding, coating or spraying. It offers important new advantages:

MOISTURE—Moisture vapor transmission is 2½ to 5 times lower than that of polyethylene. **ODORS**—Resistance to transmission of common gases 1000-2000 times greater than polyethylene. **CHEMICALS**—Almost complete non-reactivity to concentrated acids, solvents, alkalies and other corrosive materials. Grease and oil penetration is nil. Fire retardancy is excellent.

RESYN 3600 is suggested for industrial fabrics, work clothing fabrics, denims, filter clothes, military fabrics, awnings and tarpaulins, etc. It is also recommended as a binder for non-woven fabrics.

Experimental lots of RESYN 3600 are now available. A 14 million lb. plant will be on stream this fall. Write for information.

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By "welding" rubber to all metal parts of a fume fan, Buffalo Forge extends fan life 3 to 12 times. Certainly, where you handle highly corrosive fumes, there is no more economical way than with these 'Buffalo' rubber-lined fans. The extra cost for the lining is repaid many times in longer service without downtime losses for replacement.

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For Every Condition, you can depend upon Buffalo Forge for effective, efficient and economical answers to your air handling problems.

Write today for Bulletins 2424-F and FI-511, outlining the chemical characteristics, volume and pressures of fumes to be exhausted — or call your nearby 'Buffalo' Engineering Representative.

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'Buffalo' Machine Tools to drill, punch, shear, bend, slit, notch and cope for production or plant maintenance.

'Buffalo' Centrifugal Pumps to handle most liquids and slurries under a variety of conditions.

Squier Machinery to process sugar cane, coffee and rice. Special processing machinery for chemicals.

AAF Hits the Target for ®ARROW

Air washers behind this bank of Auto-AIRMAT filters require practically no maintenance. These filters, serving the assembly room, represent one of five systems at Cluett, Peabody's Atlanta plant.
Air conditioning system engineered and installed by CARRIER CORPORATION, Atlanta.

Auto-AIRMAT Installations Eliminate Lint Problems at Cluett, Peabody Plant!

LINT, the textile industry's big problem, is no problem at all in the world's largest plant devoted exclusively to the manufacture of shirts. Cluett, Peabody & Co., Inc., makers of the famous Arrow shirts, protect air washers on five systems (totalling 216,000 cfm) with AAF Auto-AIRMAT filters serving the cutting, assembly and laundry rooms.

The Auto-AIRMAT is the *only* filter specifically designed to remove lint fibres from the air and clean itself automatically. The Airmat media, installed in roll form at top of unit, becomes a moving filter curtain that is re-rolled at bottom with its lint load. Clean media is automatically introduced in sufficient quantity to maintain resistance at proper level—and the lint is wrapped up in the roll for easy disposal.

If you have a lint problem, investigate the *lint filter*—AAF's Auto-AIRMAT. For complete product information, call your local American Air Filter representative, or write us direct for a copy of Bulletin 234. Address: Mr. Robert Moore, American Air Filter Company, Inc., 275 Central Avenue, Louisville, Kentucky.

AAF American Air Filter
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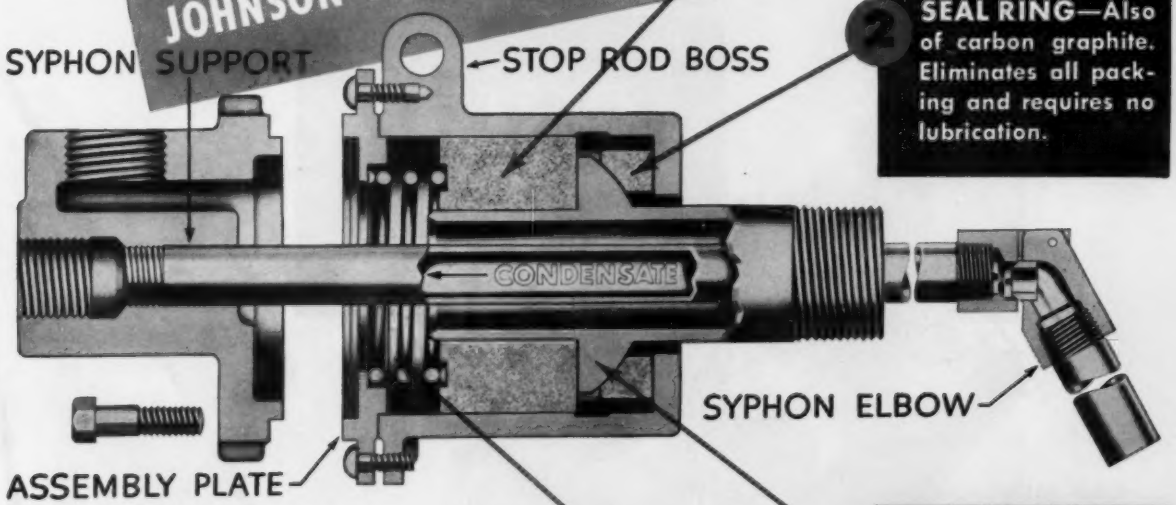
Only 4 INTERNAL PARTS

This is the one to use...
For 23" dia. Dry Cans

TYPE SB2-P
JOHNSON JOINT and JOHNSON SYPHON ELBOW



1 GUIDE—Makes the joint self-supporting. It is of self-lubricating, long-wearing carbon-graphite.

2 SEAL RING—Also of carbon graphite. Eliminates all packing and requires no lubrication.

3 NIPPLE—Rotates with the roll, and seals against the ring.

4 SPRING—Serves for initial seating only. In operation joint is pressure sealed.

Notice how straightforward and simple is the design of this Johnson Joint. This unmatched simplicity means fewer breeding places for trouble... simplifies overhaul and repair out in the field. At the same time the joint is completely packless, self-adjusting, self-lubricating and self-supporting.

In this Series 3000 Type SB2-P the assembly plate holds the internal parts in position when head is removed. This makes it a perfect teammate for the Johnson Syphon Elbow which can be inserted or withdrawn right through the joint.

Test it yourself—**We'll gladly supply a pair of the units shown for 90 day trial right in your own mill; no obligation of course. Write for details and literature.**

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Rotary Pressure Joints • Compressed Air Separators and Aftercoolers
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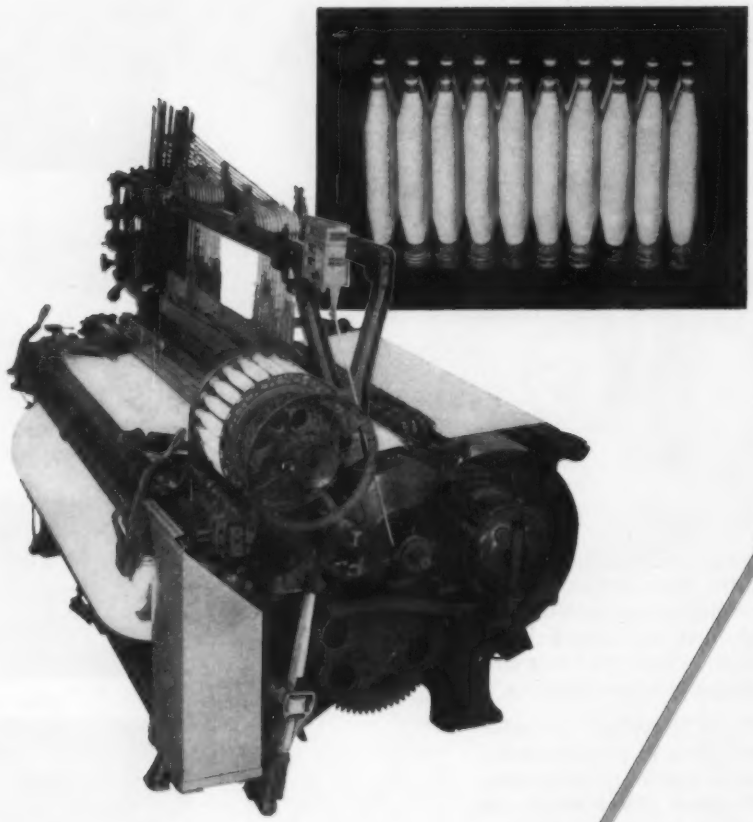
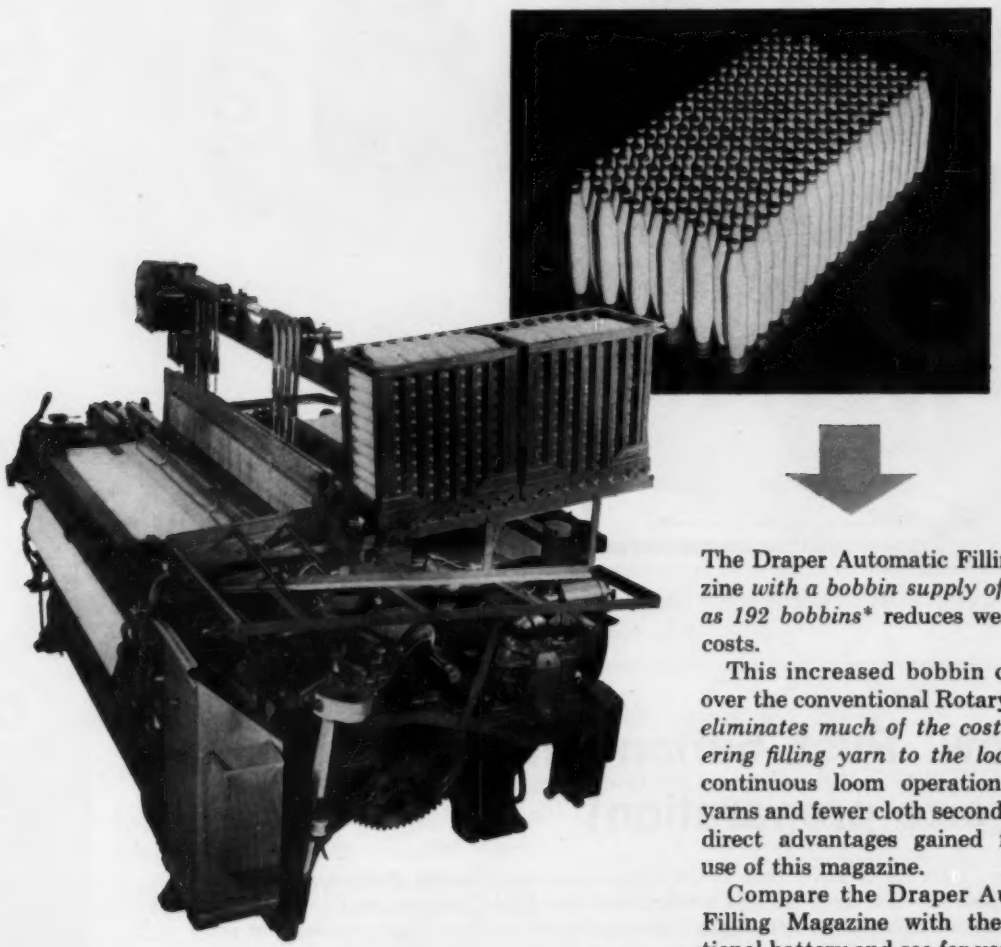


TO A MINIMUM



The Draper Automatic Filling Magazine *with a bobbin supply of as many as 192 bobbins** reduces weave room costs.

This increased bobbin capacity, over the conventional Rotary Battery *eliminates much of the cost of delivering filling yarn to the loom.* More continuous loom operation, cleaner yarns and fewer cloth seconds are also direct advantages gained from the use of this magazine.

Compare the Draper Automatic Filling Magazine with the conventional battery and see for yourself the many benefits that can be obtained.

For additional information consult your Draper representative.

**1¼" diameter bobbins*

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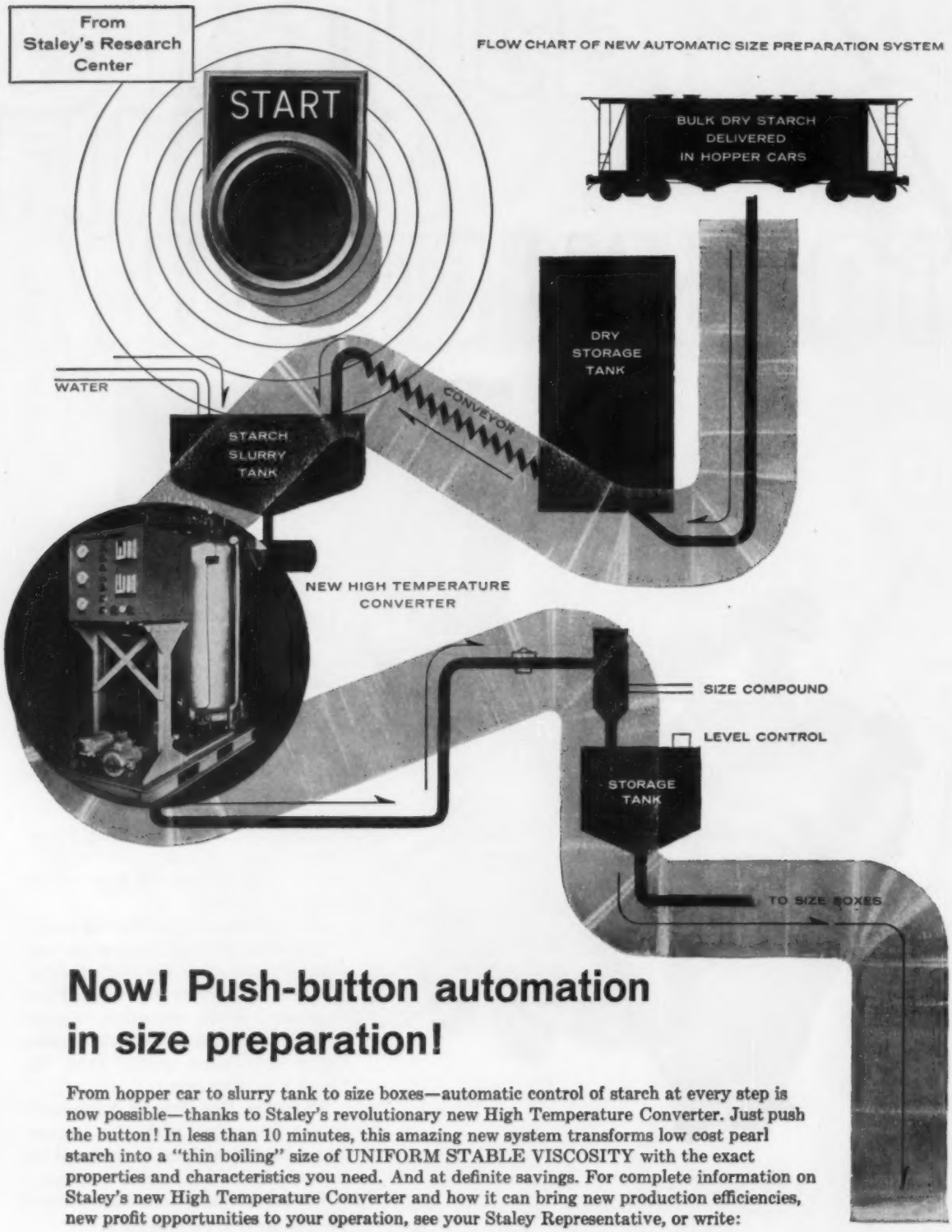

Now! Push-button automation in size preparation!

From hopper car to slurry tank to size boxes—automatic control of starch at every step is now possible—thanks to Staley's revolutionary new High Temperature Converter. Just push the button! In less than 10 minutes, this amazing new system transforms low cost pearl starch into a "thin boiling" size of UNIFORM STABLE VISCOSITY with the exact properties and characteristics you need. And at definite savings. For complete information on Staley's new High Temperature Converter and how it can bring new production efficiencies, new profit opportunities to your operation, see your Staley Representative, or write:

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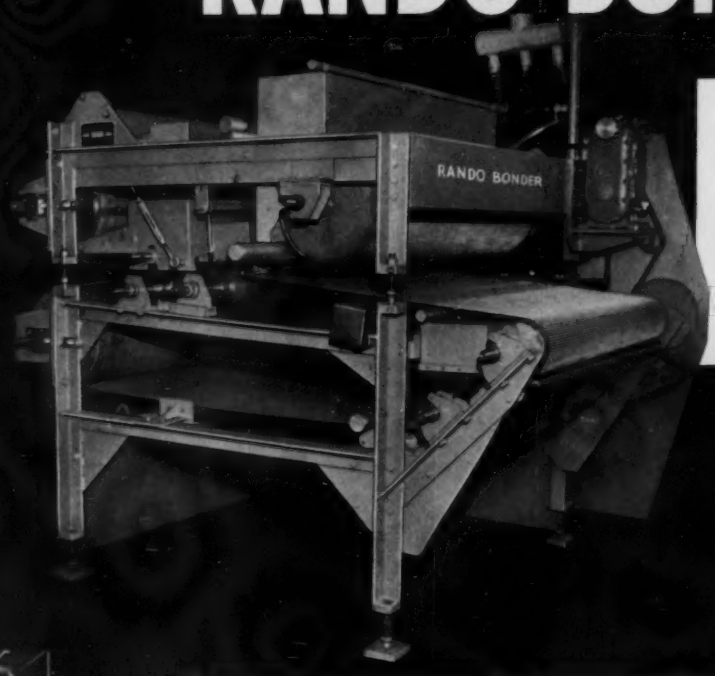
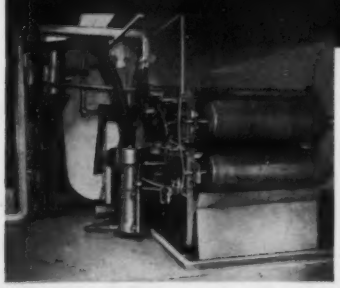
Announcing CURLATOR'S

RANDO-BONDER



A NEW TYPE SATURATOR



RANDO-BONDER operating in conjunction with Curlator's compact Chemical Feed System.

FEATURES:

- √ **uniform penetration of web without distortion**
- √ **open construction for easy accessibility**
- √ **self contained unit**
- √ **stainless steel construction used extensively**

The RANDO-BONDER is a new concept in saturator design and chemical handling. It offers numerous advantages in the manufacture of non-wovens and other specialty products. Rapid, uniform saturation of non-woven webs without drafting or distortion, together with flexibility and ease of operation and maintenance are featured. Pick-up is accomplished by means of controlled vacuum extraction. The quality of your non-wovens or other specialty products may be improved by using the RANDO-BONDER.

You may wish to investigate other specialty products made from natural, synthetic, mineral, shoddy, tobacco, metal, reclaimed tire cord, plastic scrap, felt, woven or nonwoven materials.

WRITE for more detailed information. Inquiries are invited.

CURLATOR...World's Leading Manufacturer of Fiber Web Processing Machinery.

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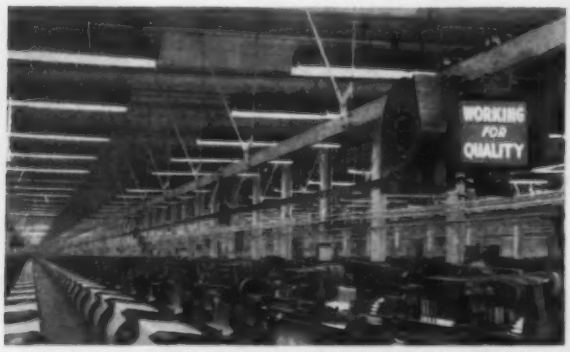
Now...keep your work areas clean automatically, with specially designed Amco Cleaners!

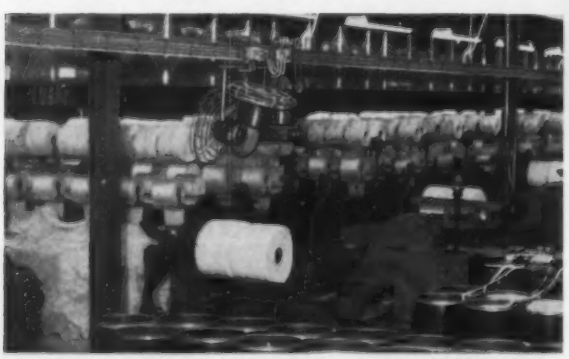
Amco has developed a wide selection of automatic cleaning equipment . . . designed to cut down manual cleaning, improve quality, and step up mill production.

For money-saving facts about Amco Cleaners, call American Moistening Company — an organization with more than 70 years' experience serving the textile field.

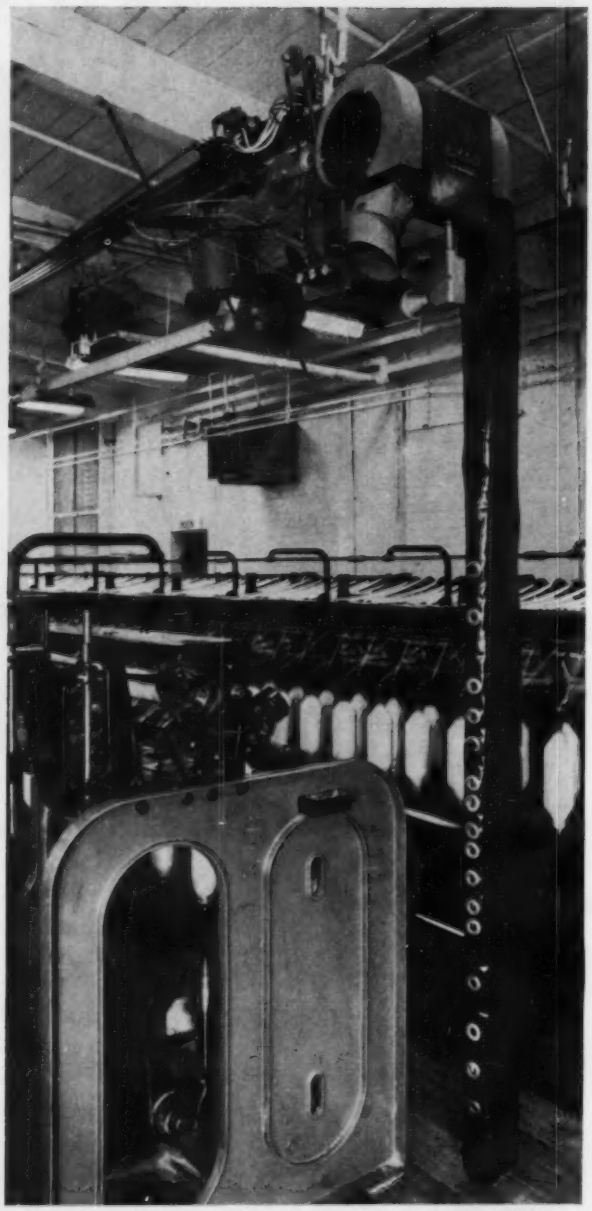


Helicone Loom Cleaners improve quality of fabrics by preventing waste accumulation on stop motions, drop wires, harnesses and reed caps.

Amco Loom Cleaners over Draper shuttleless looms. Sheeting is being woven at high relative humidity.



Amco Ceiling Cleaner provides automatic cleaning of ceiling, beams, walls and other surfaces. Excellent for card room areas.



Amco's electronically controlled Roving Frame and Ceiling Cleaner. Air delivery boot takes care of specific lint-collecting trouble spots.

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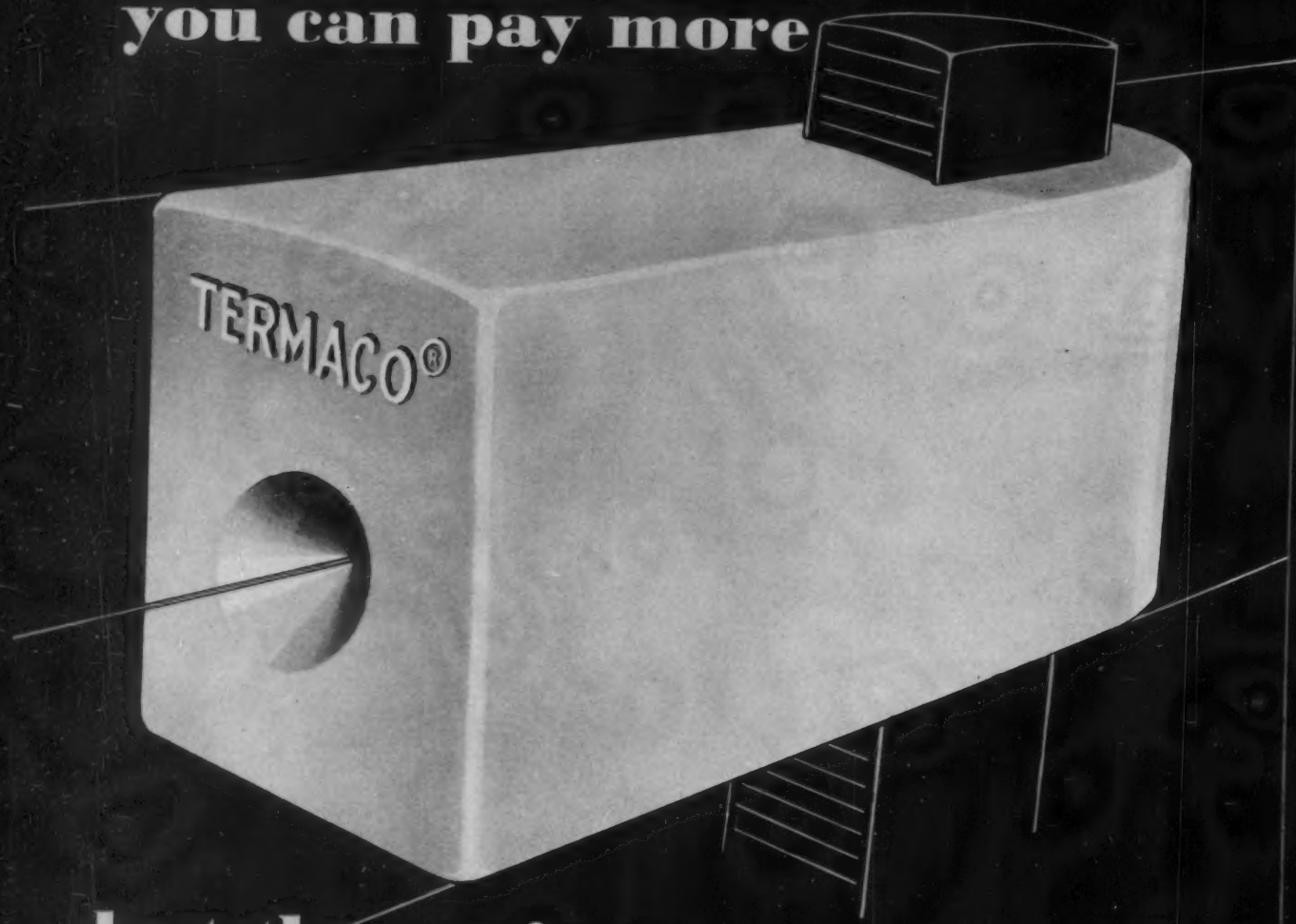
Air Conditioning Equipment — Textile Specialties

American Moistening Company, Cleveland, North Carolina

Branches: Atlanta, Ga., Providence, R. I., Toronto, Ont.

Geigy Tinon® (superior vat colors)... For industrial clothing, the name Tinon assures you of vats meticulously tested for stability, dispersibility and dyeing qualities. Geigy Dyestuffs, Ardsley, N.Y.

you can pay more



but the savings you get with

TERMACO *Light Colored Pickers*

assure **LOWEST COST PER LOOM PER YEAR**

MADE BY DENMAN RUBBER MFG. CO., WARREN, OHIO

THE TERRELL MACHINE CO., INC.

CHARLOTTE, N. C.

NEWS IN BRIEF

Moment of Truth? The 1960-61 business recession will be of critical significance for the textile industry, according to the *Value Line Investment Survey*. It will provide the "acid test" as to whether the industry has strengthened its fundamental position enough to substantially lessen the extent of profits erosion during a business downturn. Among encouraging factors pointed out by the *Survey* is a drop in excess capacity to the present 15% or so from about 30% as recently as the middle of the last decade.

Tit for Tat. Japan must open its markets to American consumer goods, including textiles, if she expects to continue to ship ever-increasing quantities of similar products to this country, a government official has warned. Speaking at a recent Far East conference in New York, E. M. Braderman, director of the Commerce Department's Far Eastern Division, emphasized that Japan severely restricts imports of American manufactured goods, but sells great quantities of textiles, clothing, and home furnishings in this country.

Fully Automated Mill. According to reports at the recent Southern Textile Exposition, a new cotton yarn mill which will be the nearest approach yet to complete automation will be constructed in Spartanburg, S. C., by Deering Milliken, Inc. Presumably the mill will be constructed on property already owned by D-M next to its Research Center.

"Government Must Equalize." The government must play an equalizing role in the creation of fair competitive conditions in international trade, R. Houston Jewell of the American Cotton Manufacturers Institute told the recent meeting of the International Federation of Cotton and Allied Textile Industries. "We in the American textile industry believe that neither our industry nor any other deserves to be shielded by its government from the results of in-

Labor-Management News

$1 Minimum for P. R. Knitters. The minimum wage for workers in the Puerto Rican sweater industry will be raised from 96 cents to $1 an hour, according to the determination of an industry committee.

N. C. Strike Loss at Record Low. The number of employees on strike in North Carolina last year was the lowest since records were first kept in 1941. And despite such widely publicized situations as the strike at Harriet-Henderson Cotton Mills, the number of strikes was also at a record low.

One Big Union for Two. More than 2 million textile and garment workers in the U. S., Europe, and Asia have merged into a single worldwide body — International Federation of Textile Workers' Associations and the International Garment Workers' Federation, in a recent joint meeting at Copenhagen, voted to merge into one organization called International Textile and Garment Workers' Federation. Textile Workers Union of America is a member of the Federation.

Handbill Law Upheld. A Federal judge has refused to declare unconstitutional an Albany, Ga., ordinance prohibiting the distribution of circulars and other advertising matter. Suit was brought by United Textile Workers of America, one of whose organizers was prevented from passing out union literature at the Albany plant of A. & M. Karagheusian, Inc.

Union Rejected. Employees of the Blue Mountain, Ala., plant of Linen Thread Co. voted 603-310 against representation by Textile Workers Union of America in a recent election conducted by the National Labor Relations Board.

New Contract. Saco-Lowell Shops and Textile Workers Union of America have signed a new two-year contract giving a 17-cent package to the 850 employees of S-L's Biddeford, Me., plant.

EXECUTIVES ON THE REACH TOMORROW'S MARKETS TODAY

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the mark of progressive management

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Beechcraft AIRFLEET OF THE TEXTILE INDUSTRY

efficient management or a failure to utilize modern technology. We also believe, however, that any industry is entitled to operate under conditions of fair competition with respect to cost factors over which it has no control. Government must play an equalizing role here," he said. Mr. Jewell, who is vice-president of Crystal Springs Bleachery, Chickamauga, Ga., was spokesman for the eight-man American delegation at the meeting.

PTI Enrollment Zooms. There are 154 new students at Philadelphia Textile Institute this semester (143 freshmen and 11 transfers), the largest enrollment increase in 11 years, and up about 50% over other entering classes during the period. Total enrollment at PTI is now 390, highest since 1952. Enrollment includes 70 foreign students from 23 countries.

No AATCC Standards. The American Association of Textile Chemists and Colorists should stick to development and promulgation of test methods and leave the setting of standards to standards-writing bodies, the Association's executive committee has recommended. This is in contradiction to the recommendation made by AATCC's study committee on long-range objectives that the Association take a more active part in the development of standards, particularly in end-use performance standards.

USDA Hikes Crop Estimate. The U. S. Department of Agriculture has raised its estimate of 1960 upland cotton production by 110,000 bales, to 14,581,000 bales. The Department's estimate of 68,200 bales of American Egyptian cotton remains unchanged.

Blouses Pointing Up. A sizable segment of the blouse-manufacturing industry looks for further gains in sales in the next few months, despite some recent evidence of lower-than-expected retail volume, according to a report by R. S. Norman, assistant vice-president of Commercial Factors Corp.

Labeling Act Change. All textile products bought by the Armed Forces according to specifications, and in a form ready for the ultimate consumer, are exempt from the requirements of the Textile Fiber Products Identification Act, according to a recent decision of the Federal Trade Commission.

Rayon Staple Dumped? Formal charges of dumping of rayon staple have been filed with the Treasury Department by the Rayon Staple Fiber Producers Association against 12 countries, including Austria, Belgium, France, Germany, Italy, Japan, Sweden, and Switzerland. It is believed that foreign "offers" or "sales" at a delivered price below recently reported domestic prices of 28 cents are vulnerable to a finding of dumping and assessment of an antidumping duty under the Antidumping Act.

"We ask no special favors"—Jackson

■ A CLEAR-CUT explanation of the textile industry's position on foreign trade was made before members of the Atlanta Rotary Club recently by Robert C. Jackson, executive vice-president, American Cotton Manufacturers Institute. Discussing foreign trade in general, and its effect on the textile industry in particular, Mr. Jackson had this to say:

"If a foreign textile manufacturer can sell goods here because they are better styled than ours, he should be allowed to do it; if his goods are prettier, with more appeal to the consumer, he should be allowed to sell; if he can sell here because he is more efficient, we should not penalize him; or if his product is more serviceable or durable, the consumer should not be denied it.

"But, if the foreign manufacturer is selling hundreds of millions of yards of goods, and apparel, not because they are better styled, or prettier, or produced more efficiently, or more durable or serviceable—but, rather, selling the products only because they are cheaper; and cheaper only because they are manufactured under labor and cotton cost conditions that are illegal in the U. S.—then we contend that is an intolerably unfair situation, one that violates every reasonable concept of what should constitute any nation's foreign trade policy."

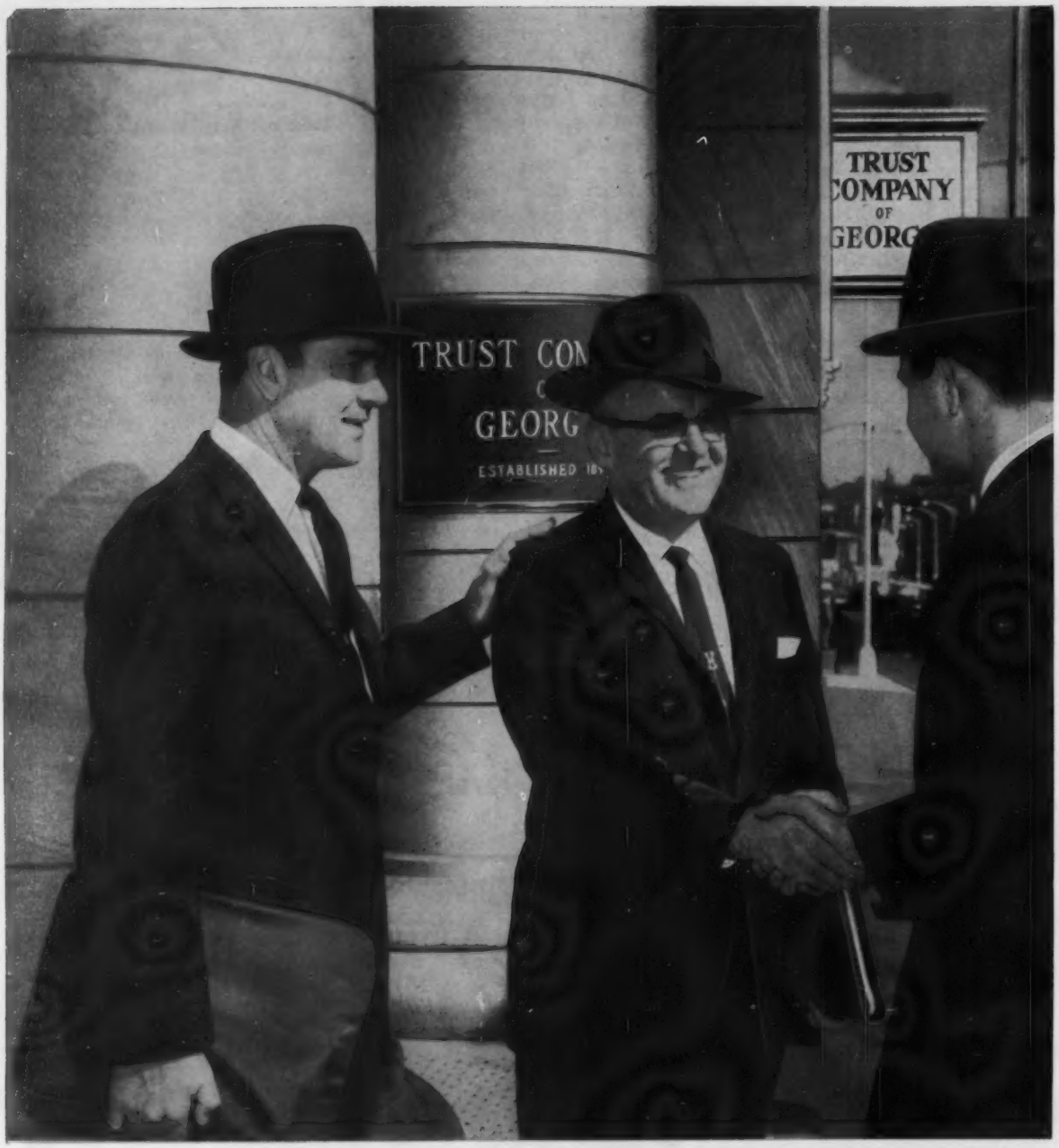
ACMI's Jackson

Mr. Jackson, terming solution "much simpler than our government would have us believe," said a reasonable system of import quotas, or tariff quotas, will allow foreign mills a reasonable portion of the U. S. market and at the same time remove the devastating uncertainty now plaguing the U. S. textile manufacturer.

He termed the U. S. textile industry the most efficient, the most diversified, possessing "the most astute management," of any in the world.

He told the Rotarians that the textile industry wants no special favors, no special tax relief, no subsidies. He said industry officials realize the absolute necessity for maintaining a high level of international trade, and that "the textile industry must carry its share of that load—which means carrying its share of the imports, even though we don't need them."

"We just ask only for the privilege of competing in our home market on just reasonably equal terms," he declared.



The Banker is a Good Man to know

The Trust Company of Georgia — which has almost 70 years of experience — believes that a banker and his client should have a close relationship. Because of this belief, at the Trust Company of Georgia you will find that the Senior Officers are available to their customers. Find out for yourself how this open-door policy in banking can work to your advantage. The Trust Company main office is located at Edgewood and Pryor and there are six other banking locations in Atlanta. Experienced officers to serve you are available at all these locations.

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More Research Money. Some 400 corporations representative of U. S. industry are spending an average of 10.7% more for development of new products and processes in 1960 compared with 1959, according to a survey by the American Management Association. Only six textile firms were surveyed; all have increased their development budgets this year, with an average increase of 8.3%. While this year's figures are of course not yet available, the textile firms surveyed spent 2.1% of their sales on development during 1959.

Figures Optimistic, Talk Pessimistic? "Several of the forces which have reduced the apparel market's share of the income dollar have come to an end," declares Raymond Rodgers, professor of banking at New York University, forecasting a bright future for the apparel industry in the American economy. He observed that gross national product, national income, disposable personal income, and consumer expenditures have improved and were all $16 to $20 billion above the comparable 1959 level. "Most of the talk is pessimistic—but most of the figures are optimistic," he declared, adding, "Men talk of recession—but all of the over-all measures of business activity are at, or very near, record-breaking levels." Professor Rodgers was keynote speaker at a recent apparel sales meeting.

Textile Film Revised. The film on careers in textile chemistry, "Field With a Future," underwritten by Wica Chemicals, Inc., is now in the process of revision.

It is designed for junior- and senior-class high school students, but has also been widely shown on TV, and before civic clubs and other community groups.

Mill Failures Up and Down. There were 51 business failures in the textile mill products group during the first nine months of this year—seven more than in the comparable period of 1959, according to a report by Dun & Bradstreet, Inc. However, this year's greater number of failures had liabilities of $4,818,000, compared with $5,363,000 for the mills which failed last year.

The airlines are reported to be using large quantities of pillow cases made of Kimberly-Stevens' "Kaycel" nonwoven fabric. The pillow cases are throw-away items.

"Waterproof" Redefined. President Eisenhower has signed into law the bill redefining "waterproof cotton cloth" for tariff purposes, which was steered through Congress by Rep. Wilbur Mills (D., Ark.) [see TI for August, 1960, p. 81]. American cotton mills had complained that fabrics classed as "waterproof" were entering this country with the waterproofing treatment so applied that it could easily be scoured out. Waterproof fabrics are classed at an 11% ad valorem rate, compared with the usual 20 to 32%.

Textile Imports, First Half of 1960 Compared With First Half of 1959

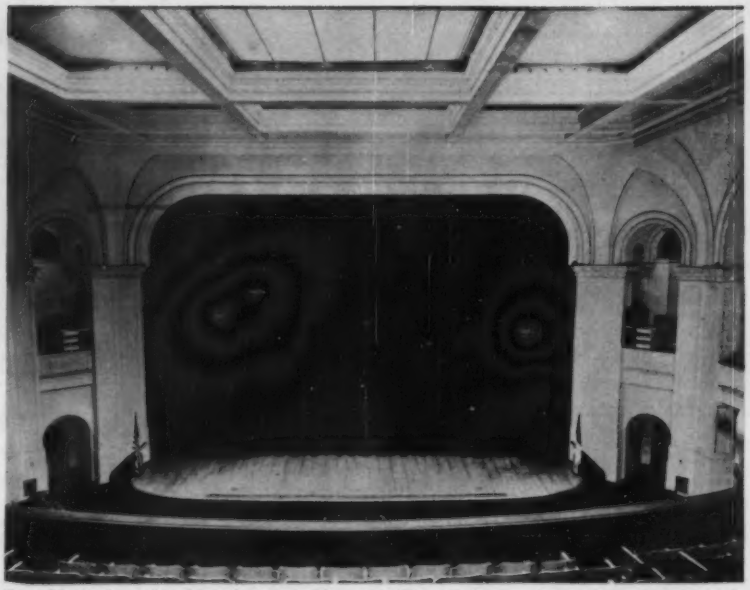
	Imports	Increase %
Textile Manufactures $1,000,000	489	21
Cotton Manufactures $1,000,000	139.6	50
Cotton Cloth Million sq yd	252.3	207
Cotton Yarn Million lb	7.9	1500
Man-Made Fiber Fabrics Million lb	4.7	2.4
Apparel $1,000,000	99.2	31
Cotton Shirts 1,000 doz	924	10

Mill Tries "Piggy-Back." Collins & Aikman Corp. has made an experimental "piggy-back" truck and train shipment from its North Carolina plants at Albemarle and Norwood to the New York Metropolitan area. Two trucks were sent via Norfolk & Western Railway.

Crepe Research at PTI. The U. S. Department of Agriculture has awarded a contract to Philadelphia Textile Institute to conduct re-

search aimed at developing cotton yarns suitable for producing crepe fabrics of attractive appearance, high quality, and durability.

Nixon Sympathetic. Although he made no specific promises, a discussion of textile imports with Vice-President Nixon was termed "encouraging, rewarding, and hopeful" by the spokesman for a group of 30 textile industry leaders who met with the Republican presidential candidate in Charlotte, N. C., last month. After the conference, the Vice-President had this to say: "To the end of assisting the textile and garment industries and their workers to meet the problems ahead, I am determined to explore every constructive line of action." He also said that he favors "more vigorous and imaginative efforts through diplomatic channels to make greater and more effective use of voluntary limitation of shipments by other countries" whose American sales are "proceeding at a pace which threatens orderly development" of domestic markets.



Four hundred yards of vinyl-coated Fiberglas fabric make up this stage curtain recently installed in the auditorium of the American Museum of Natural History in New York City.

Gastonia Office for N. C. State. An office in Gastonia, N. C., has been opened by the School of Textiles, N. C. State College, to service its cooperative program with combed yarn spinners. M. E. Campbell, dean of the school, emphasized that the new office will be a service facility rather than a testing laboratory.

Changes at LTI. The gradual de-emphasis of textile at Lowell (Mass.) Technological Institute again was highlighted by the recent abolishment of the Division of Textiles at the school. To replace it, a Department of Textile Technology has been organized under the Division of Physics and Engineering Science. Other Departments of the Division include Chemistry, Chemical Engineering and Paper Technology, Leather, Plastics, and Textile Chemistry.

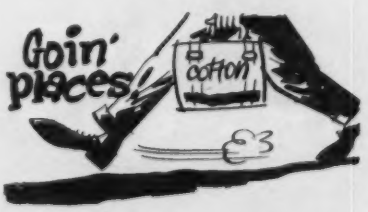
Space-Age Textile Research. Air Force-sponsored research projects critical to the recovery of manned space vehicles have been awarded to Arthur D. Little, Inc., Cambridge, Mass., and Fabric Research Laboratories, Inc., Dedham, Mass. Goal of the contracts, which total a quarter of a million dollars, is the development of extreme temperature-resistant, flexible, "textile-like" materials to be used in space ship deceleration devices. About two-thirds of the work will be done at FRL; the rest at ADL. Materials under consideration are fibers of high-temperature metal

alloys, refractory metals, glass and ceramics, and graphite, as well as organic fibers.

Knitter Mechanic Courses. Philadelphia Textile Institute, in cooperation with Wildman-Jacquard Co., is holding a series of three-week training courses for knitter mechanics. The first was held last month, and will be repeated starting November 14th, December 2nd, and January 16th. The first week of the course is spent at PTI; the second and third weeks at the Wildman-Jacquard plant in Norristown, Pa.

L-22 Now Available. The recently approved American Standard L-22 has come off the press and is now available. The controversial standard gives 75 end-use requirements for all types of textiles, and prescribes the test methods to be used (those of American Society for Testing Materials, American Association of Textile Chemists and Colorists, Textile Distributors Institute, Commodity Standards Division of the U. S. Department of Commerce, Federal Specifications, American Viscose Corp., and U. S. Testing Co.). Sponsored by the National Retail Merchants Association, it is an expansion of an earlier L-22 standard which covered rayon and acetate fabrics only. Copies of the two-volume set are available at $6.00 from American Standards Association, 10 E. 40th St., New York 16, N. Y.

Males Use More Cotton. A record high of 1.5 million bales of cotton was consumed in men's and boys' trousers and shirts during 1959, according to the National Cotton Council. This was the



largest single outlet for cotton during the year; cotton trousers now account for 78 per cent of this market, in which cotton usage has more than doubled since 1947.

RECENT TECHNICAL AND COMMERCIAL DEVELOPMENTS

by J. B. Goldberg
Consultant to the Textile and Allied Industries

Exclusive

FIBERS AND YARNS

New Japanese Fibers. Asahi Chemical Industries Ltd., Tokyo, has announced plans to produce Type F Cashmilon acrylic fibers, said to have better dyeability than earlier types. * * * Report from Japan indicates that a research project by a producer of a food seasoning has resulted in the synthesis of a polyamino acid textile. It is suggested that arrangements will be made with fiber producers after the company has entered into full-scale production of the chemical. * * * The Toyo Spinning Co. is said to be contemplating the manufacture of a new graft-polymerized fiber of rayon and acrylonitrile. The modified fiber is claimed to be superior to ordinary acrylics in dyeability. * * * The Dai Nippon Spinning Co. is planning to make limited poundage of a cotton-vinyl alcohol grafted fiber identified as "Jubiran" and apparently best suited for knit goods.

New Names. For the export trade, Toho Rayon Co. of Japan has changed the name of its "Alon" acetylated high-tenacity rayon to "Tohalon." * * * Courtaulds (Ala.) has announced "Moynel" as the name for the high-modulus rayon originally designated as "SM-37."

Other Developments in Man-Made Fibers. British Nylon Spinners is offering a 100/25 and 70/20 nylon for the production of bulked yarns. * * * The Du Pont Co. is making limited amounts of a Type 28 Orlon acrylic fiber which features a low coefficient of friction, retained during use after repeated dry cleaning or laundering. It is currently available in 8-denier size only, priced at $1.53 per lb. * * * A patent recently issued to a Swiss fiber producer covers the manufacture of melt-spun filaments with irregularly spaced thick places achieved through directing a liquid coolant against the filaments before they are completely solidified. * * * A means for altering the surface characteristics of cotton and rayon fibers is suggested with the introduction of "Cellare 100," a high-strength enzyme.

MACHINERY AND PROCESSES

U V Absorbers in Polyester Yarns. Imperial Chemical Industries Ltd. has disclosed investigation of the effect of various ultraviolet absorbers on resistance of bright Terylene polyester fibers to degradation by sunlight. Up to four-fold increase in life obtained by application of one compound. Resistance to mildew growth resulting from the presence of nutrients is also enhanced.

Fiber-to-Yarn Process. Japanese Howa Industrial Co. claims to have developed a single integrated preparatory process for the conversion of raw cotton into sliver. Two intermediate processes are eliminated, effecting a labor saving of about 50% and sliver uniformity is maintained.

Czech Bulking Units. Bulked filament yarns are being produced by the "Tvasil" uptwister, using conventional false-twisting. "Evalon" is said to be a cross-winding unit that produces non-torque bulked yarns by a method similar to the Deering Milliken "Agilon" process. Stuffer box technique is exemplified by the "Anilon" unit, processing yarns in the 40- to 200-denier range at speeds of up to 175 yards per minute.

Electronically Controlled Knitting Machine. Belgian Cobert full-fashioned hosiery machine is operated by an "automatic pilot" and is adjustable for type, size, and length of stocking to be knitted.

FABRICS AND FINISHES

Flame-Resistant Finish. Investigation has disclosed that compounds other than THPC can be used with APO as a durable flame retardant. Included, for example, is diammonium phosphate, lower in cost and free from releasing of formaldehyde fumes in the pad bath, drying or curing ovens. Bath stability is another advantage.

Aid to Level Dyeing. An Italian machine, designed to eliminate dye faults in cross-wound spools or cones, shapes these packages in a dry condition before dyeing. The semi-automatic corner rounding is said to help maintain level dye distribution throughout the drying-off processes, and ultimate off-spooling of yarns in knitting or subsequent winding is improved.

Sponge-Core Package Dyeing Process. The Du Pont Co. has applied for a patent on a new sponge-core package dyeing process which compensates for shrinkage, swelling, or bulking of yarns of all types during dyeing. Stainless steel fiber or spring dye tubes are inserted into highly compressible cellulose sponge cores. The sponges may be rejuvenated by immersing in caustic solution, squeezing, neutralizing and rinsing, permitting their reuse about four times. Consideration is also being given to the possibility of using the sponge core with the Burlington beam machine.

Permanent Creases and Pleats in Wool Fabrics. Developed at the U. S. Dept. of Agriculture Wool and Mohair Laboratory in Albany, Calif., a new treatment for imparting durable creases to wool fabrics utilizes dilute solutions of ethanolamine with a small amount of detergent to facilitate wetting. Creases can be set in a light-weight fabric on a tailor's press at 280 F in one minute.

Wet Wrinkle Recovery in Cotton Fabrics. A convenient method re-

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ported by the U.S.D.A. Southern Regional Research Laboratory relies on padding of the fabric through a solution of formaldehyde and hydrochloric acid and allowing it to react at room temperature. The cloth is then passed through an alkaline wash and dried. Topping with about 2.5% of a crease-proofing resin provides as much dry and wet wrinkle recovery as was obtained with about twice the amount of the same resin on the original cotton fabrics.

Extra-Wide Schreiner Calender. An English company is now producing a calender which can schreiner finish fabrics up to 112" in width at speeds of 8 to 24 yards per minute. A single instrument panel controls various operating functions. Push-button control can relieve hydraulic pressure when a stitching goes through nip without separating the rolls. An external radiant heater provided over the top roll permits temperatures of up to 430 F.

Nylon Flock Carpets. A German firm is offering 100% nylon flock pile carpeting with flock applied electrostatically. It is claimed that durability and recovery from pressure marks of heavy furniture are good. Special treatment of the nylon pile fibers is said to result in only moderate clinging of dust, making ordinary vacuum cleaning very effective.

Durable Water and Oil-Repellent Finishes. The Imperial Chemical Industries Ltd. has reported that suitable choice of recipe made by combining Velan and "Scotchgard" can yield good durable water and oil-repellency on cotton or polyester-cotton blend fabrics at a cost lower than that of the QM "Quarpel" type finish.

New Rib Knitter. The Brinton Machinery Division of Scott & Williams, Inc., will soon be marketing a new 18-cut rib knitting machine, the firm announces. The machine is designed for the production of web knit or pique fabrics so popular in knitted dresses. European knitters have been producing these in fine worsted, and exporting them to the United States in sizable quantities, according to recent reports.

Stripping Dyes from Polyester Fabrics. Canadian Industries Ltd. has developed a new high-temperature stripping method for dyed 100% polyester fabrics said to be simple, cheap, and superior to any previously employed method. The technique is based on the use of caustic soda and sodium hydrosulfite and it is claimed that it can be regulated in severity and is effective on dye classes other than the azoics. No objectionable residues are left in the fiber.

New Flame Retardants. Discovery of a reaction in the synthesis of organo-polyphosphorous esters will permit the use of several new flame-retardant additives to man-made fibers. The compounds are odorless liquids, expected to be priced at about 35¢ per lb for the chlorine types and 60¢ per lb for the bromine compounds.

More Crosslinks, Better Wash-and-Wear. Changes in the properties of cotton fabrics during treatments to produce wrinkle resistance depend more on the number of crosslinks formed, and less on their size and structure, say USDA scientists.

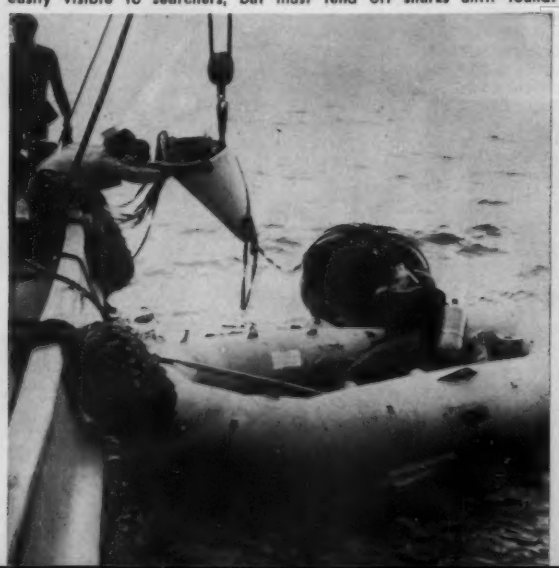
Polishing Cloth. A patent has been issued to a Southern mill on a fabric of specified construction which is impregnated with colloidal silica.

TEST METHODS

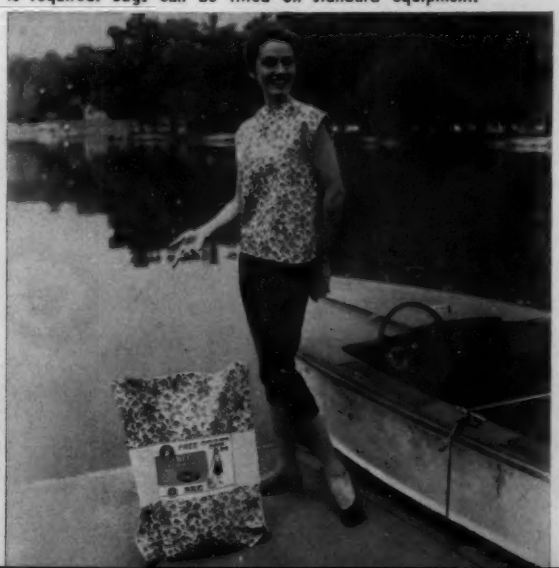
New Color Lamp. A new English fluorescent lamp is reported to give light nearest to daylight. It is available in 80-watt, 5-foot and 40-watt, 4-foot sizes.

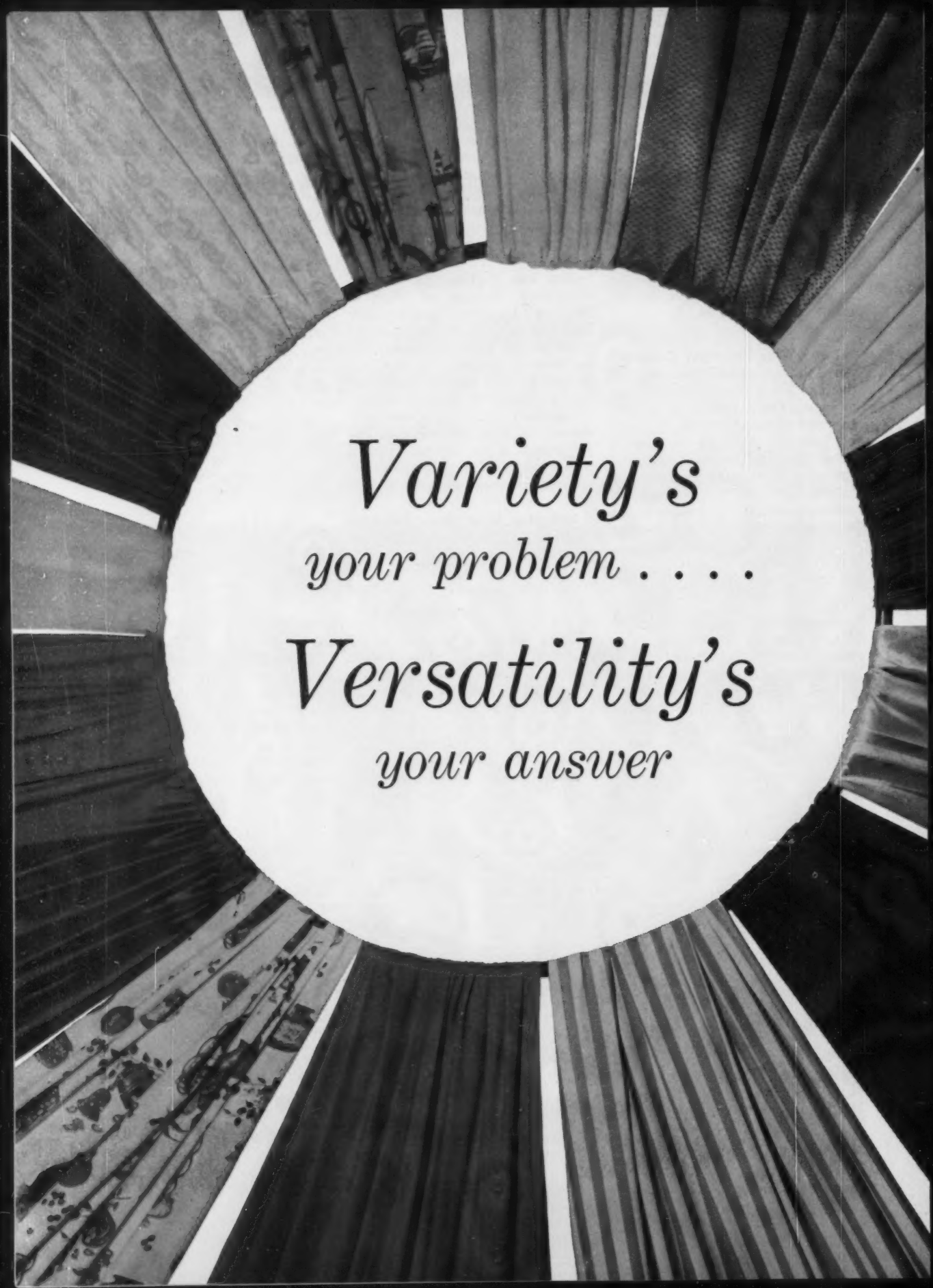
Glove Fabric Extensibility. An English extensionmeter has been introduced for determining the amount by which a textile fabric can be extended. It is particularly suited for measuring the stretch likely to be encountered in gloves and similar articles of wearing apparel.

A neoprene-coated nylon fabric covered the flotation system which kept this ballistic missile nose cone afloat until it was recovered from the ocean as shown here. The covering must not only be easily visible to searchers, but must fend off sharks until found.



This 25-pound cotton flour bag, by Bemis Bro. Bag Co., converts into a full-cut casual blouse. You just empty the bag, remove the stitching, wash, iron, and it's ready to wear. No additional sewing is required. Bags can be filled on standard equipment.

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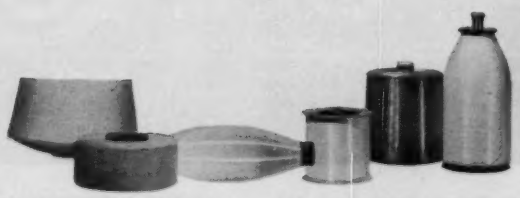

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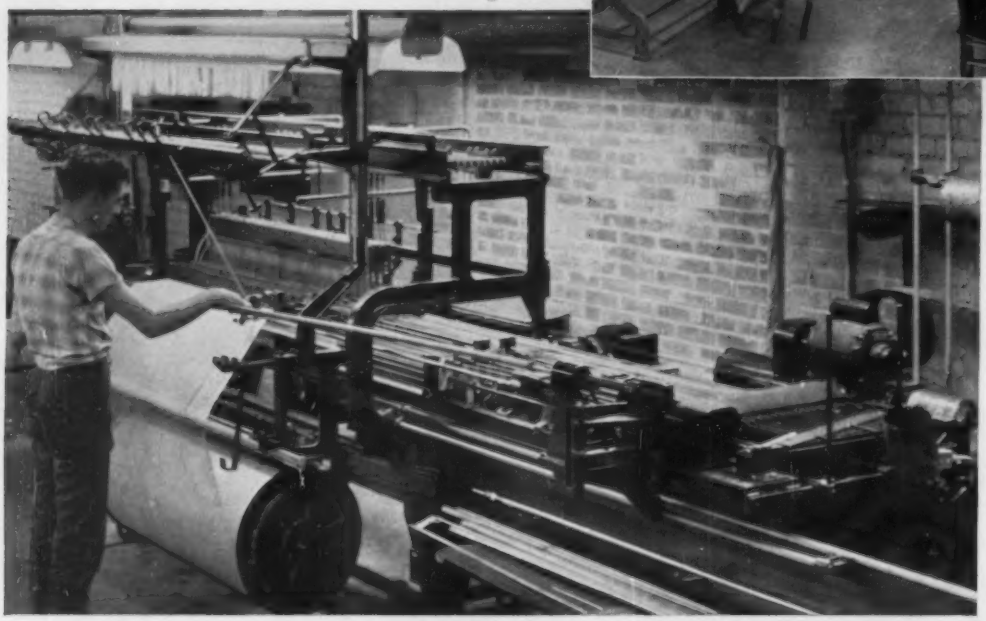

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EXECUTIVE VIEWS

Cotton and the Welfare State

After the article with the above title appeared on these pages of our July issue, we received a letter from Dr. E. J. Overby, director of the Cotton Division, Agricultural Marketing Service, U. S. Department of Agriculture. Dr. Overby took issue with the author, and asked him to reply to a series of questions. Dr. Overby's letter is printed here, followed by the author's answer.—The Editors.

GENTLEMEN:

This has reference to the recent article in your TEXTILE INDUSTRIES entitled "Cotton and the Welfare State." The comments of the author, described as "a man who is closely identified with the textile industry," are quite bewildering to us and if many of his statements can be justified by the facts, he must have a great deal of information we do not possess, some of it contrary to our findings.

We have listed below some questions for which we would appreciate your author's answers. As to some of these, we think we know the answer, which conflicts with your author's conclusions. As to others, we have little or no information. All of them are relevant to the rather positive and critical statements that your author has made about the work of this Division.

1. What system of quality evaluation do the spinners now use in buying cotton?

2. How does the mill buyer determine whether the cotton is equal to description if bought on official standards or bought on type?

3. What factors of quality does the Cotton States Arbitration Board, jointly supported by United States spinners and shippers, use in arbitrating cotton?

4. What are the requirements for a Government classer as to experience and skill?

5. Specifically, what premiums were paid for what characteristics of cotton when custom ginned.

6. To what extent was this custom ginned cotton bought in 1959 without being classified and paid for on grade and staple?

7. To what extent will cotton be purchased on the basis of custom ginning during the forthcoming season without classification as to grade and staple?

8. If cotton raised under Plan A was so unsatisfactory in quality, why was so much of it sold on competitive bids at premiums and discounts for grade and staple that reflected prices above minimum resale prices?

9. If grade and staple have no relationship to spinning quality, what measurable factors in cotton are related to spinning quality?

10. If color, trash, and length are not important, what are the essential measurable quality factors?

11. To what extent are price premiums and discounts paid by mills for strength, fineness, and other factors susceptible of laboratory measurement?

12. To what extent have mills paid premiums to producers for specific characteristics other than grade or staple to encourage production and ginning of such desirable qualities.

13. In trying to change the official standards to make them more representative and meaningful in describing current production, what groups either in the United States or abroad have offered the most objection to such changes?

14. Does the following quotation still accurately reflect the views of United States spinners on standards:

> Quality factors are unchanging; a certain quality remains the same, regardless of what names may be given to it. * * * The fundamental issue at stake is whether it is wiser to tamper with standards in order that they should more nearly reflect conditions of the crop, as the Department of Agriculture obviously has sought to do since 1946, or whether it is in the greater public interest generally to maintain fixed standards which define and safeguard quality. A practice of repeatedly revising standards to match

crop changes strikes us as a dangerous expedient. By the same token, for the sake of convenience a federal agency might just as well decree that yardsticks be shortened to 35 inches or stretched to 37. The result would be nearly as confusing. Frequent changes can only nullify the essential reason for standards.

15. What is the system of grading that domestic mills need?

16. To what extent was either B or A California cotton subjected to lint cleaners and dryers and how do these practices in California compare with those in other states?

17. Specifically what premiums were paid to get cotton "ginned properly" and where did such premiums prevail?

18. If there has been "frightful damage" to our cotton, how has it been possible for mills to increase the output per worker, particularly per spinner, during recent years?

19. To what extent do shippers and mill buyers "downgrade cotton" that has been subjected to lint cleaning and drying, and on what basis?

20. Could mills or others furnish 20-pound samples of cotton demonstrating steps in quality factors from good to bad so that necessary fiber and spinning tests could be made in this Department for standardization purposes?

We are not wedded to the status quo; like a great many other agencies in and out of government we are seeking diligently for better methods to evaluate cotton. If he will undertake to give his answers to these, we think something constructive might come out of his article, at least in the way of a better understanding on our part of his point of view of quality evaluations.

E. J. OVERBY

The author's reply, condensed, follows.—The Editors.

I have again read my article on "Cotton and the Welfare State," and have carefully read Dr. Overby's letter several times, and it seems to me that he has completely missed the point of my argument. Most of the questions he raises are technical and have nothing whatever to do with the points emphasized in my article. I would say that the first seven questions are completely irrelevant to the matter under discussion.

In answer to the eighth question, I would say that since American spinners have to buy American cotton, they have little choice about paying premiums for cotton according to the classifications assigned by the USDA. The American spinner is caught in a squeeze from which he has no escape unless he is smart enough to get in on this Plan "B" proposition.

As to the ninth question, the alleged grade and staple assigned by the cotton classer often has little relation to the spinning quality of the cotton. The true grade and staple of cotton properly ginned without unnecessary machining will of course have a profound effect on spinning characteristics. When some good, mature, bright low middling cotton is manhandled in a gin and chewed up in about three lint cleaners, it looks very pretty to a cotton classer, but

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it doesn't look pretty in a busted spinning room.

The burden of my argument was that the spinning mills and their requirements are almost completely ignored by the USDA in its approval of ginning methods which spinning mills have found to be harmful. Great numbers of these spinning mills have no laboratories of their own for investigating the properties of the cotton they buy, and have to depend on the grade assigned by a government cotton classer. Those mills which do have good laboratories are still rather helpless to do anything about the troubles inflicted on them by bad ginning practices.

If there is nothing available but damaged cotton, American spinners must perforce pay a premium for cotton to which higher grades have been assigned by government classers. Not so in Canada—Canadian mill men can buy any cotton they want, and have been large users of Mexican cotton when the price was right.

Canadian spinners have been particularly critical of American cotton, and one cotton buyer there told me that 1959 Central Belt cotton was of such poor quality that he could not use it at all. But since our government will sell American cotton to Canadian mills at eight cents off the American price, they try to use our cotton no matter how bad it is.

The ginners generally know what they are doing to the cotton. Reports from several ginners' conventions have indicated that they are thoroughly familiar with the damage done by saw type lint cleaners, but so long as government classers will not give top grade to cotton which has not been through a lint cleaner, it must go through one or more of these machines. In fact, everybody involved except the USDA seems to know that we are damaging our cotton by current ginning practices.

Any number of textile men have complained that the government classers themselves generally don't know what they are doing. One man who runs a large group of mills said that he became so disgusted with the cotton he was getting that he took a sample from one bale and broke it into three parts and sent these to three different government classing offices. He claimed that the reports varied so widely that you would never have thought the cotton came from the same lot, much less the same bale.

How can the classer properly judge the real value of the cotton when it has received mechanical treatment which grinds up the fine trash so that it is hardly visible to the classer? Two samples of cotton which look exactly alike may be radically different in fine trash and nep content. There are men who claim they are making better yarn out of low middling cotton than they can make out of strict middling because the strict middling they get is nothing but bright low middling put through lint cleaners until most of the trash is taken out, and what remains is ground up so fine that it can't be taken out.

I have in mind one man operating a hosiery mill who put in better cleaning machinery and went from middling or better to low middling or worse, and said he got complimentary letters from several of his customers commenting on the improved appearance of his socks. This man buys and checks every bale of cotton himself, and says that on some of his Memphis trips he sees buyers for the big southeastern chains paying a premium for strict middling cotton that he wouldn't have on an even trade for his low middling.

I am unable to see that the technicalities raised by Dr. Overby have any bearing on the root of the problem about which so many textile people are lamenting. I am writing articles only as an observant person acquainted with a great many complaining mill managers, hoping that airing their complaints in a widely read forum may do some good.

FUTURE EVENTS

Date		Event	Location
Nov.	10-11	Textile Section, American Institute of Electrical Engineers	N. C. State College Raleigh, N. C.
	12	Textile Education Foundation, Inc.	Georgia Tech Atlanta, Ga.
	12	Alabama Textile Operating Executives carding and spinning discussion	Thach Auditorium Auburn, Ala.
Dec.	2	Rhode Island Section, AATCC, annual meeting	Johnson's Hummocks Providence, R. I.
	2	Western New England Section, AATCC	Rapp's Restaurant Shelton, Conn.
	3	Southeastern Section, AATCC	Atlanta Athletic Club Atlanta, Ga.
	9	Delaware Valley Section, AATCC	Philadelphia, Pa.
	9	Northern New England Section, AATCC	Colonial Country Club Lynnfield, Mass.
	9	South Central Section, AATCC	Hotel Patten Chattanooga, Tenn.
		1961	
Mar.	23-25	American Cotton Manufacturers Institute annual meeting	Fontainebleau Hotel Miami Beach, Fla.
April	12-14	Alabama Textile Manufacturers Association annual meeting	Beuna Vista Hotel Biloxi, Miss.
	24-28	Knitting Arts Exhibition	The Auditorium Atlantic City, N. J.
	26-29	Georgia Textile Manufacturers Association annual meeting	Hollywood Beach Hotel Hollywood, Fla.

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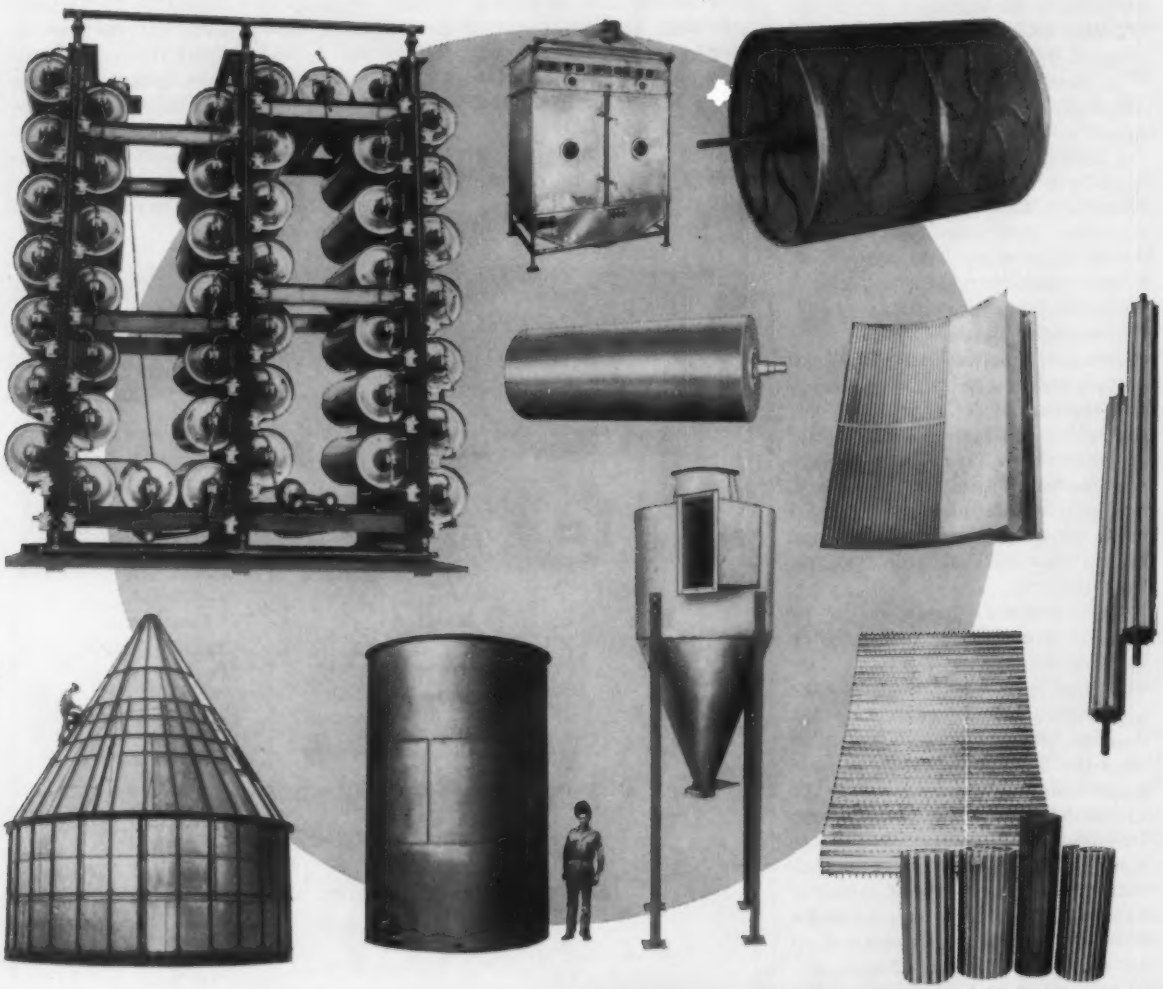

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How to repair faller bars

Both soldered and plastic bonded type faller bars for Pin Drafters may be repinned in the mill by these factory-approved procedures

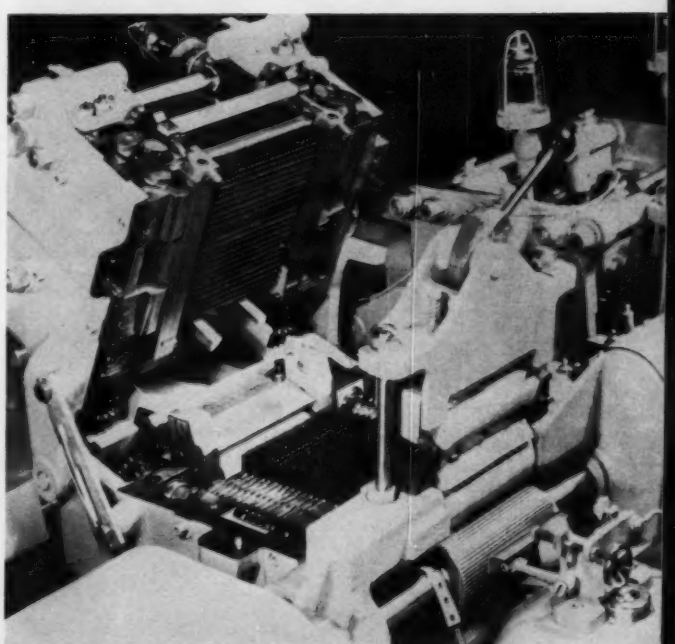
Staff prepared—Exclusive

Part 1—Soldered type faller bars

MANAGEMENT and operating executives of worsted system mills in which Pin Drafter* faller bars are being repinned may find helpful this word-and-picture presentation of Warner & Swasey-approved methods being used at Southern Reneedling Works, Inc., Gastonia, N. C., a firm which specializes in faller bar reconditioning as well as comber reneedling.

Since two kinds of faller bars are used in Pin Drafters—(1) the soldered type (for Models 2350 and 2380) in which pins are held in position with solder and (2) the plastic bonded type (for Models 3650, 3680, and 3700) in which pins are set in flexible plastic strips that are bonded into a slot in the faller body—two repinning procedures are required. Both are described in this article, but to avoid confusion only the method for replacing pins in the soldered type is presented in this issue. The repinning procedure for the plastic bonded type will appear in the December issue.

Strict adherence to these procedures is essential for satisfactory results, Howard B. Yancey, vice-president and general manager of Southern Reneedling, pointed out to the TEXTILE INDUSTRIES editor who was photographing the operation. "Futhermore," Mr. Yancey continued, "our experience has been that for high quality repinning the operation should be performed in an air-conditioned area. As a result, we have air conditioned our entire plant."



Close-up of the Model 2380 Pin Drafter in which faller bars of the soldered type are used.

Continued next page

*Pin Drafter is a registered trademark of the Warner & Swasey Co. for its intersecting draw frames.

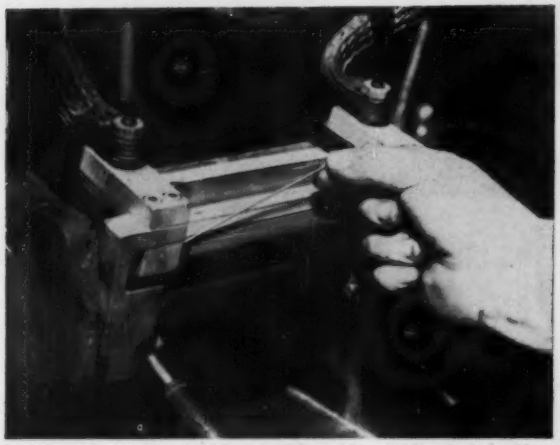
How to remove old pins from soldered type faller bars

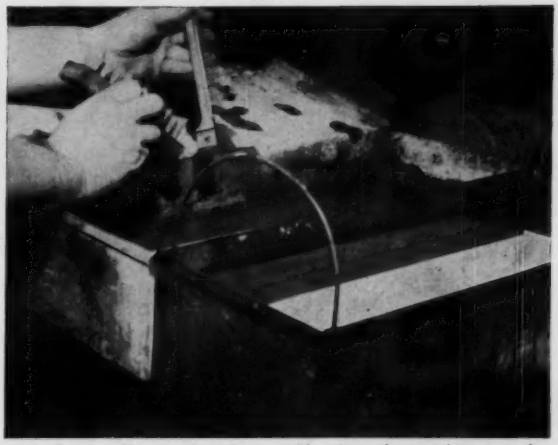
1. Thoroughly clean faller bar to be repinned with solvent to remove all grease, oil, fiber, and other foreign matter, and then insert it in a depinning fixture **(left photo)** with pins out and lip side up as shown in close-up view **(right photo).** With shield (white, rectangular-shaped object above faller bar) in place to protect operator, turn electricity on for about 10 to 15 seconds with depinning fixture control set at Tap. No. 1. Note the sheet metal hood over the fixture to carry off smoke and fumes.

2. When temperature of bar is sufficient to melt solder, remove old pins by brushing them off with a small brush or pliers. Clean pin slot thoroughly with a small scraper **(left photo)** while bar is still hot and solder in molten state. Note old pins on table below scraper. Take bar out of depinning fixture and check it for straightness and proper width of slot **(right photo).** Correct if necessary.

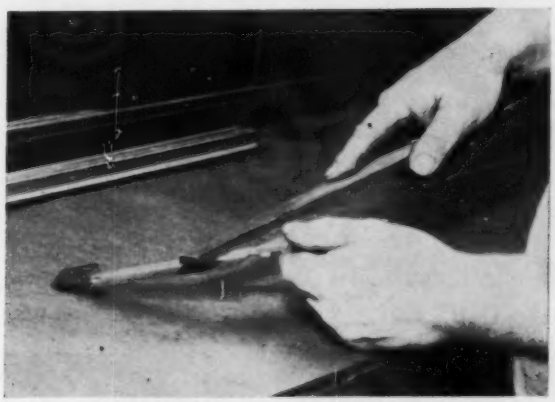
How to install new pins

1. Insert new pins in pin holder or book **(left photo).** Press pins down to a set gauge and tighten book to hold pins firmly in position. Thoroughly clean jaws of the heating and soldering fixture **(right photo)** until they are free of any oil, grit, or dirt that may interfere with cohesion. Place the book and bar into the jaws of the machine as shown and clamp securely. Turn electricity on to apply heat to bar. While bar is being heated put soldering flux in the pin slot in the bar, being sure to cover the entire length of the slot.





2. When flux starts bubbling, apply solder **(left photo).** Note solder is in wire form. It is recommended that solder be a 50-50 composition of lead and tin, 1/16" in diameter, and 4½" long. With a solder guide made of ¼" Lucite in the shape of a windshield ice scraper and approximately 6" wide at the scraping end, guide the solder into the lip cavity of the bar. When the fifth piece of solder (number will range from 5 to 9, depending on type of pinning) has melted in, turn off heat. While solder is still in molten state, brush off excess with a stubby hair (not nylon or other synthetic material) brush. Allow bar to cool in machine for about 3 minutes. Remove bar and book from machine. Take bar out of book. Place bar in a hot (160 to 180 F) neutralizing solution **(right photo)** for a minimum of 15 minutes. Remove bar from neutralizing solution. Rinse bar in clean hot water, followed by another bath in a hot-water-soluble oil solution. Blow bar dry immediately after removal from final hot bath.



3. Remove all rough surfaces from the bar and pins by first filing off any excess solder.

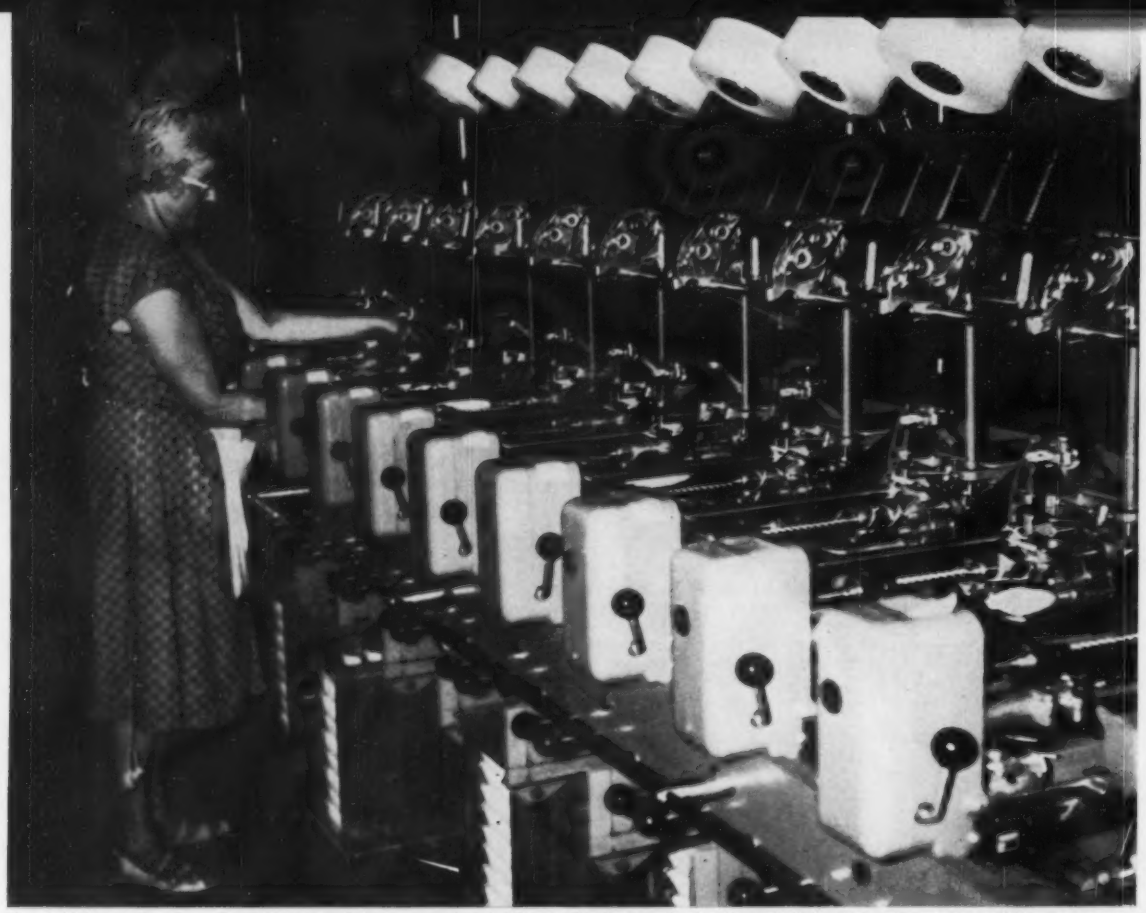
4. Wire brush the faller bar, using an 8" diameter brush with bristles .005" in diameter and revolving at 1750 rpm.

5. Finally, straighten very carefully any pins that may need it and apply a light film of rust preventive oil over the entire bar to protect it while not in use.

Where Repinning Equipment and Supplies May Be Obtained

Pinning Fixture (for removal of old pins and installation of new ones)—Precision Products Co., 8811 Maywood Ave., Cleveland 2, Ohio.
Pin Holder or Book—Precision Products Co. (see address above).
Pins—Dean Division of General Industries, Putnam, Conn.
Flux—Allen soldering salts are suggested. Available from L. B. Allen Co., Byrn Mawr Ave., Chicago, Ill. To mix flux, dissolve one to two pounds of salts to each gallon of water used. Test solution with "hydrion" test paper until it has an acidity of pH 4.
"Hydrion" Test Paper—The Cleveland Chemical Rubber Co., 2310 Superior Ave., Cleveland, Ohio. (Specify Catalog No. T-9360.)
Solder—National Lead Co., 1776 Columbus Rd., Cleveland, Ohio.
Pink Neutralizer Indicator Compound—L. B. Allen Co. (see address above). Compounds should be mixed with water until "hydrion" test paper indicates pH 9.

► *Procedure for repinning plastic bonded faller bars will appear in the December issue.—Eds.*



The Schlafhorst Servoloom Autocopser winds a precision bobbin with the tip bunch demanded by Draper's automatic filling magazine.

No more battery plugging here!

Working part time, one person "fills batteries" on 263 fifty-inch looms

Staff prepared
Exclusive

THE FIRST production installation of Draper automatic filling magazines working in conjunction with the "Servoloom" quiller serves 263 X-2 looms at the Beaumont division of Spartan Mills, Spartanburg, S. C. One man is assigned part-time duty to a job that formerly needed four or five battery fillers.

With the combination being in use for only six months (approximately), a full evaluation is impossible at the present. But in addition to the very obvious advantage of requiring so little labor to keep filling in the looms, the installation appears to have improved jerk-ins.

Fabrics are sateens and corduroys; filling yarns are 12s (50 tex) to 23s (26 tex). There are nine 11-spindle automatic quilling units.

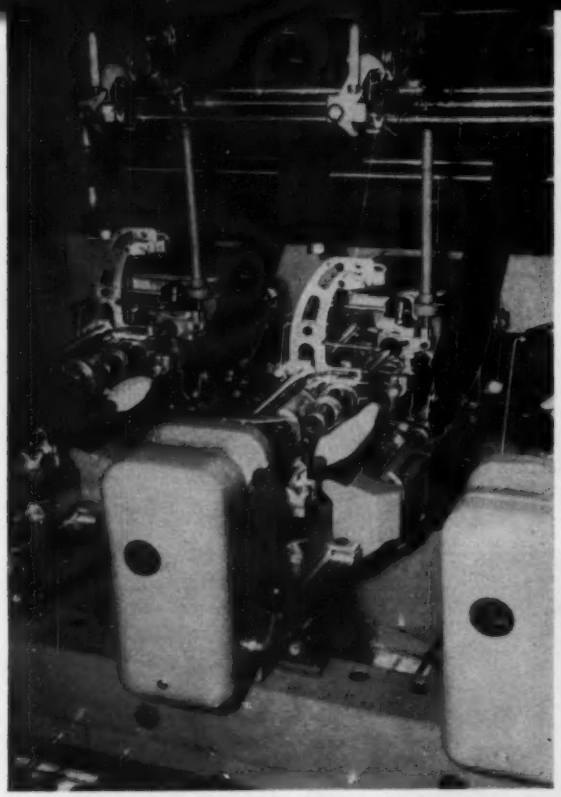
The quillers load the filling magazines automatically with firm, precision-wound filling packages complete with tip bunch. This item is adjustable at each spindle, with tip length, location, and firmness being made to order.

Once the magazine is full, it is wheeled (on a special truck) to the loom and installed as a complete "battery" with the packages already "plugged." The loom takes over at that point, removing the packages from the magazine and inserting them in the shuttle as needed.

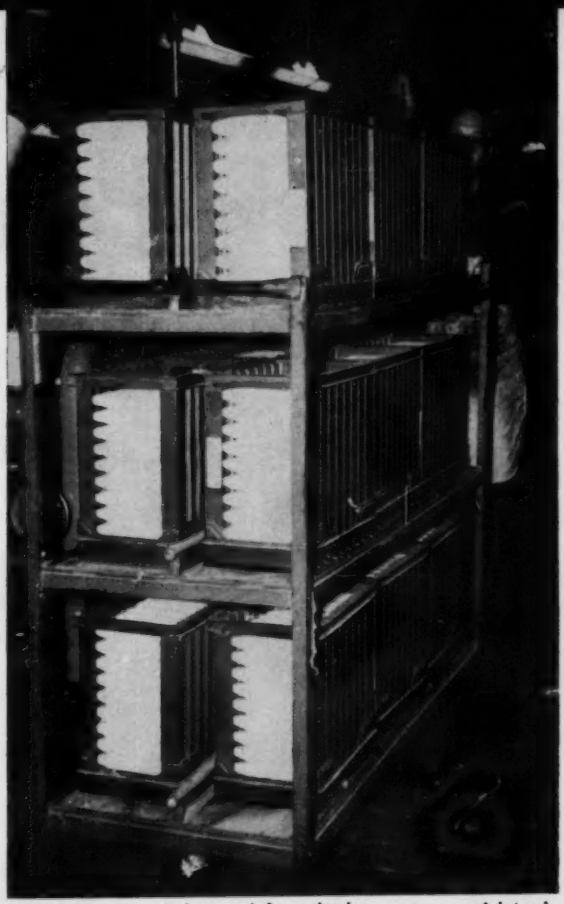
While some changes are still being made, maintenance is nominal with no special problems. No fixers were added, and there was no overloading the original ones. A few new routines were added (and a few old ones dropped), however, by the factory representatives who installed the equipment.

Management reports only one regret over the arrangement. All filling magazines are on one type of loom in one weave room; and, although the quillers and magazines will handle the various yarns spun at Beaumont, styling and production planning is hampered because other styles in other weave rooms with different types of looms cannot be run on this system at present.

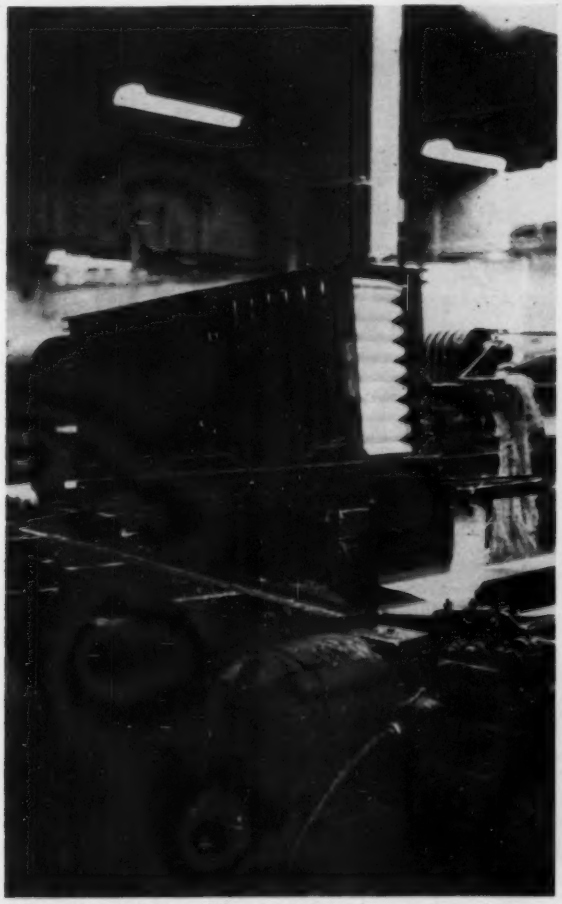
With the investment seemingly headed toward amortization within three or four years, Superintendent J. L. Adams feels results "have been good and the arrangement shows great promise."



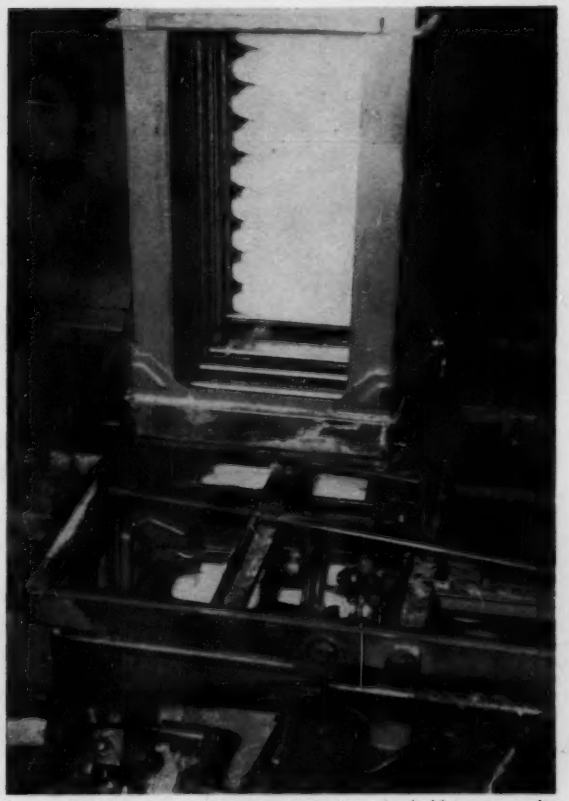
Each spindle permits tip length, location, firmness to be set.



Magazines are carried to and from the looms on a special truck.



Where 4 or 5 battery fillers used to work, none is needed now.



Loom automatically extracts from magazine the bobbins it needs.

How to make fabrics with Rovana yarn

Flat saran yarn offers styling and economic advantages

by Walter J. Klubowicz
Textile Development Engineer
The Dow Chemical Co.

Exclusive

THE NEW textile yarn —Rovana* saran micro-tape—is available for a wide variety of commercial applications. Produced in Midland, Michigan, it is marketed by Dow's Textile Fibers Department in Williamsburg, Virginia.

Rovana yarn is available in 300, 400 and 550 denier in a variety of pigmented or "dope dyed" colors having excellent color fastness properties. The put-up is on tubes having a 2" ID with a package weight of 2 - 2½ pounds.

Weaving practices are the same as for filaments. Double-loop weaver's knot may be needed.

Yarn should roll off the packages to keep twist at a minimum. The tension must never be greater than 0.14 gram/denier.

Giving the yarns a "backward" twist at the quillers will offset twist inserted as the filling unwinds from the quills.

Properties and applications

The yarn is unique, particularly from the point of view of its cross-section, heat sealing, embossing and flammability characteristics. Its structure includes a flat or rectangular cross section that produces greater cover than yarns of equivalent weight per unit length. Such a structure provides economic advantages to the user in that fabrics constructed to yield the same apparent closeness of weave require ⅓ the amount of Rovana yarn.

This ribbon-like geometry, giving styling and economic advantages, is reflected in fabric performance—such as increased tear resistance—which can be as much as three to four times greater than that of cellulosic fabrics of similar weight. Superior resistance to tearing is achieved by greater surface contact of the warp yarns with those of interlacing filling yarns.

Thermoplasticity favors embossing and heat sealing. Perhaps this thermal versatility, which allows durable pattern formation at embossing, is the most unique styling advantage of Rovana micro-tape.

Embossing effects have been

*Rovana is a trademark of The Dow Chemical Company for products, including saran micro-tape.

achieved on fabrics containing combinations of Rovana yarn (the Rovana yarn content should be at least 60 per cent) and other fibers. Thermal and dielectric sealing offers increased efficiency and savings in fabricating operations. Seals of excellent strength have been obtained not only between 100-per-cent Rovana fabrics but also between Rovana and dissimilar materials.

Sunlight resistance opens the way to outdoor applications. Shade cloth outdoor exposure for 18 months under actual conditions of application reveal that a fabric of this yarn retains 87 per cent of its original strength whereas the usefulness of the compared cotton fabric failed after five months.

Flame resistance is inherent. Combination fabrics containing as much as 33⅓ per cent of a flammable component still are self extinguishing.

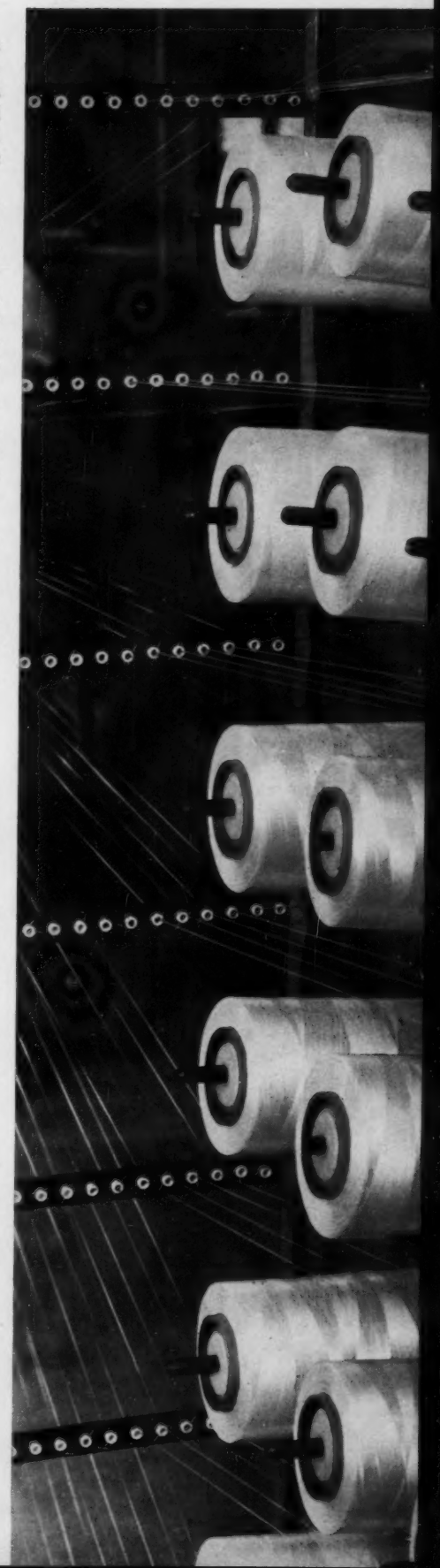
It is important, however, to consider the distribution of the flammable fiber when designing and styling combination fabrics, since localization could promote flame conductance.

In addition, Rovana is resistant to chemicals, rot and microbiological attack; has good wet strength and dimensional stability; and does not achieve a high static level usually associated with synthetic fibers.

These features have made Rovana yarn especially useful in applications such as drapery, upholstery, automotive seat covers, outdoor furniture, luggage and wall covering. Fabric style potential may be broadened further through imaginative manipulation of color and denier.

The tape width of Rovana increases with denier: 300 denier—0.017″; 400 denier—0.025″; and 550 denier—0.032″. However, the thickness remains the same—0.003″.

This characteristic allows for one-beam makeup with multi-denier Rovana yarns. Thus a combination of color and denier mixture at the loom permits the achievement of unique results such as striae, linen effects, and grass manifestations.



Tips for twisting, rewinding, warping, quilling, and weaving Rovana

The techniques of engineering and producing fabrics from Rovana are basic and are similar to those of any continuous filament material processed on textile equipment.

Twisting. The cross section of Rovana normally discourages single end twisting, since twist will negate its high covering power. However, fancy twisting is an interesting styling device because of the yarn's geometry.

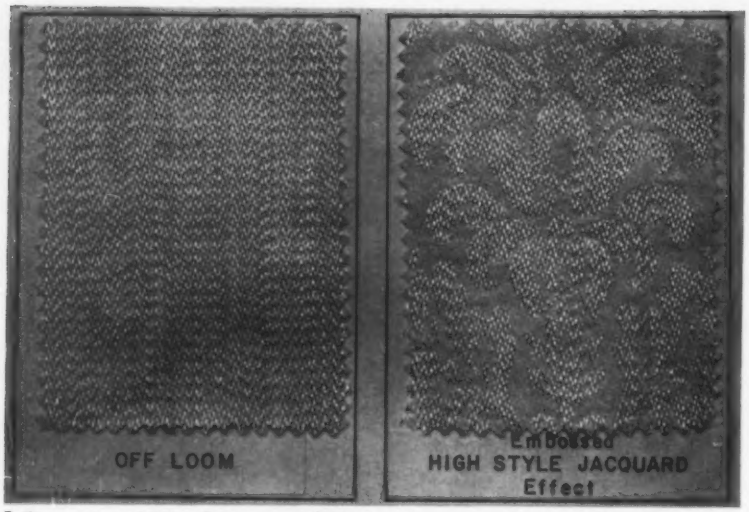
Traditional novelty yarns such as ratinés, seed, and bouclés can be made from Rovana in desirable yarn counts on conventional equipment. Also, ply twisting complements the exploitation of textures and fabric weights not obtainable from single yarns.

Frame speeds equal to those employed in twisting equivalent yarn sizes are used. Solid vertical rings have been found to promote the preservation of original yarn properties. Precaution should be taken to select a proper yarn traveler, eliminate separator contact and to insure a correct ring rail adjustment.

With all of these characteristics achieved, the maintenance of yarn properties is insured. Any one of them out of control will lead to a tenderized yarn.

Redrawing. The rewinding of a yarn to another package often is referred to as redrawing and usually is done to present the next process with a more suitable package and/or a greater number of packages with which to work. Since Rovana is a tape or ribbon-like material, the introduction of twist into warp yarn is undesirable for reasons of efficient weaving.

Consequently, the yarn is handled so that it is redrawn without



Satin weave containing Rovana yarn (left) is embossed to give the pattern to the right.

twist. In other words, the transfer of Rovana yarn from the creel package to delivery package is performed by rotating the creel package. Minimum and uniform tensions are suggested to resist yarn deformation.

Gate and disc type devices and snubbing mechanisms have been employed to control the tensions. Yarn contact surfaces, such as chrome plated metal, tend to give lower tensions regardless of the type of tension device and surface contact. Tension should not exceed 0.14 grams per denier.

Warping. Since warp quality determines to a large extent its ability to be woven and the grade of the resulting fabric, it is necessary to give close attention to those factors affecting efficient processing and fabric character. Being thermoplastic in nature, the yarn must not be overextended. Diligence must be applied to keep running tensions from stretching the yarn.

Rovana yarns are warped on the silk system, known as horizontal warping. This system lends itself to pattern work. The vertical creel allows the creel packages to revolve. This unrolling action delivers the yarn to the reel in a flat and twistless state, thus insuring satisfactory yarn separation at the loom.

Yarn tensions must be consistent and uniform throughout the warp. An adapter or insert must be employed to permit each package to turn freely and evenly about a creel pin. This selection is important since adapter weight and bearing surface characteristics can influence fabric quality adversely by causing undue and non-uniform strains upon Rovana. Quite often the effect is not noticeable until the fabric has been woven.

Quilling. Proper tension control is the key to minimizing filling stops at weaving and achieving quality fabric. The lowest tension that will permit firm quill formation is recommended and should not exceed 0.14 grams per denier. Quills wound as suggested have been woven without shelling, barré or tight picks.

Best operational results have been achieved with 8″ and 8¾″ finished bobbins and a full quill diameter of 15/16″. Over end withdrawal is usual at this operation; however, the supply package should be so creeled that when the yarn from the quill is inserted into the fabric a minimum of twist will be included.

Minimum twist filling can be realized by removing the yarn from the creel package in such a direction that it is contrary to the unwinding of yarn from the quill at weaving. The normal unwinding from the quill is clockwise; therefore, a counterclockwise removal of yarn from the creel package at quilling would result in a minimum of twist in the filling yarn.

Weaving. Since it is unnecessary to size the micro-tape, the yarns can be tied-in or drawn-in immediately after warping. There are no unusual problems and the same basic principles of filament weaving on single and multi-shuttle looms are employed when weaving fabrics of Rovana.

While specific fabric constructions call for different harness crossings, good results are obtained on most constructions with intermediate timing. Shedding mechanisms should be in good repair since an equally divided shed is essential for quality production. Race plates should be covered with a felt or pile fabric to prevent injury to the bottom shed line by the shuttle at the time of flight.

Warp yarns are kept to a minimum tension by having the top shed line clear the front wall of the shuttle by 1/8″ while the bottom shed line is positioned approximately 1/16″ above the race plate cover. Such clearance also assures proper space for shuttle travel.

With this, a minimum setting commensurate with efficient operation is recommended for picking action, since abnormal power imparted to the shuttle will not only cause "shell offs" but also will promote excessive wear of equipment.

The usual weaver's knot is applied when piecing is required. Normally, a knot with a single loop is sufficient; however, knot slippage due to a heavy sley and/or a high number of picks per inch may require a double loop.

As is true of other filament yarns, high humidities can lead to shuttle boxing difficulties and gummy warps. Weave room conditions of 55 to 60 rh and 75 to 80 F promote satisfactory processing.

Currently, many mills are processing the yarn into fabrics for a variety of end uses. The basic conditions outlined in this article contribute to quality processing and higher efficiencies which are vital in today's highly competitive market.

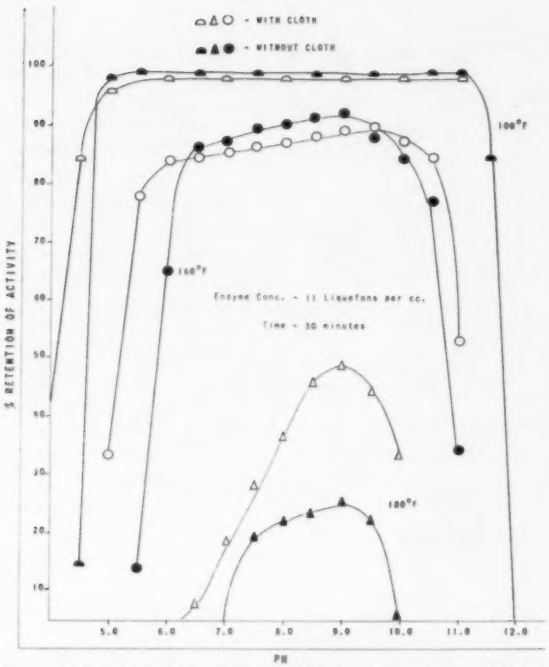


Figure 1. Effect of pH on stability of baceterial amylase at different temperatures and in the presence or absence of substrate.

DESIZING... *What conditions are best?*

How time, temperature, and pH affect the efficiency of desizing with enzymes

by Frederick J. DiCarlo, Richard J. Coleman, and Patricia T. Horeisch
The Fleischmann Laboratories
Standard Brands, Inc.

Exclusive

BACTERIAL amylase has relatively good stability over a wide range of temperature and hydrogen ion concentration. These properties, which are important in commercial applications, serve to distinguish bacterial amylase from most other enzymes.

Numerous technical articles have appeared through the years describing the physical properties of this enzyme, its action on starch, and the resulting degradation products. The results of these studies have been interesting and rewarding, but most are too general for direct useful application to a commercial desizing process. It was our intention in this work to develop reference data for use by textile processors which would enable them to select the proper desizing conditions for a specific end result.

A desizing test was developed at The Fleischmann Laboratories which has been particularly useful for evaluating enzyme preparations under conditions simulating a beck or kier desizing (1)[1]. In the present report we are covering the effect of factors such as time, temperature, pH, and enzyme concentration as related to the efficiency of the desizing process.

A publication (2) on purified bacterial amylase shows that the enzyme is most effective at pH 6.0. However, the published experimental work was limited to temperatures of 86 to 122 F, whereas commercial desizing is generally conducted between 120 and 180 F.

Since enzymes are proteins, they are subject to inactivation by heat. This sensitivity to heat varies with pH and a given enzyme is characterized by the pH at which it exhibits the greatest resistance to inactivation. Bacterial amylase is most resistant to heat at about pH 9. Since this is far from the optimum activity pH of 6, it has become commercial practice to use the enzyme somewhere between pH 6 and pH 9. The present report concerns the investigation of this pH range in laboratory desizing tests run at temperatures from 100 to 200 F. Thus it represents an effort to guide the selection of a suitable pH for specific operating conditions.

Discussion of Experimental Results. The thermostability of bacterial amylase was determined in the presence and absence of swatches of sized cloth. The reresults are shown in *Figure 1* for work conducted with an enzyme concentration of 11 liquefons per cc for 30 minutes at 100 F, 160 F, and 180 F.

At 100 F, the enzyme displays a high order of stability over the broad range of pH 5 to pH 11, both in the presence and absence of the cloth. Enzyme stability decreases with increasing temperature. At 160, the best stability is found at pH 9 and there is good stability in the range of pH 6.5 to pH 10.0. Also at 160 F, there is little difference in stability in the presence or absence of sized cloth.

The data obtained at 180 F show quite a different result. First, the test conditions have resulted in a maximum retention of only 50%

[1]Numbers in parentheses are literature references at the end of the article.

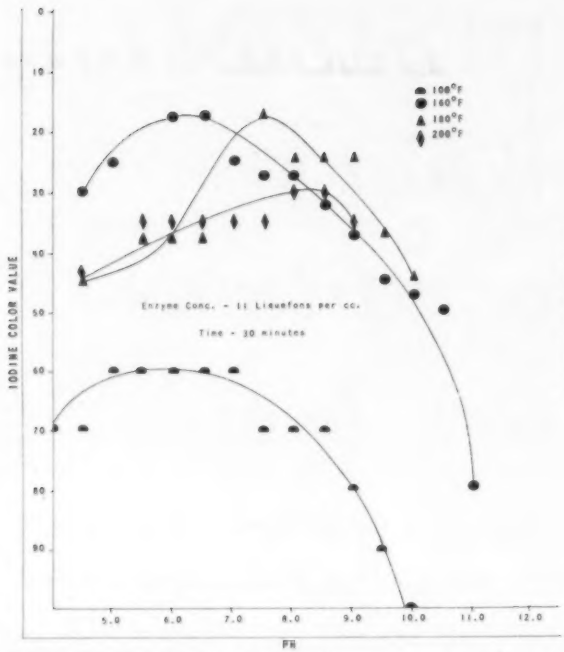


Figure 2. Effect of pH on desizing at different temperatures, showing change in optimum desizing pH.

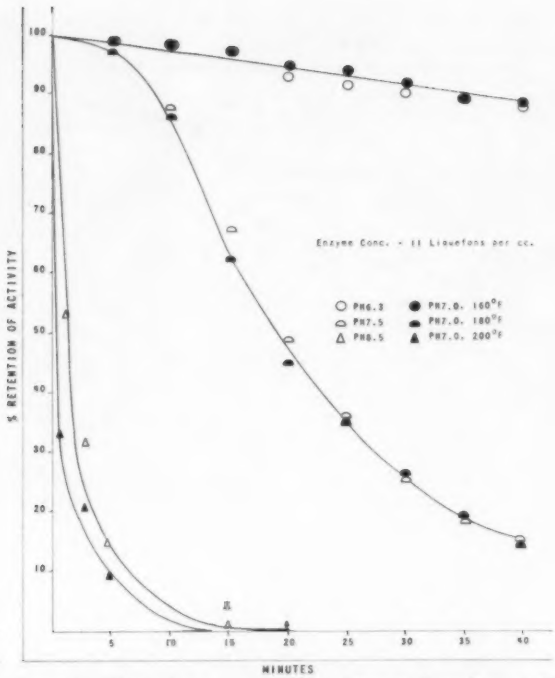


Figure 3. Effect of time on stability of bacterial amylase at different temperatures and pH values.

of the enzyme potency, whereas the highest values at 100 F and 160 F were approximately 100% and 90%, respectively. Second, the pH range is narrow, pH 8.5 to 9.5, with the optimum at pH 9.0. Third, the enzyme is considerably more stable in the presence of sized cloth than in its absence; i.e., at the optimum pH 9.0, 50% of the enzyme potency is retained with cloth present, but only 25% in the absence of cloth. This comparison is an illustration of the characteristic stabilization of an enzyme by its substrate. At 200 F after the heating period of 30 minutes the retention of enzyme potency was found to be too low for accurate measurement.

From the same desizing experiments, activity as well as thermostability data were obtained. This was done by periodically removing cloth swatches from the desizing baths and treating them with iodine solution. The extent of desizing was ascertained by the starch-iodine color as described previously (1). *Figure 2* shows a group of curves prepared by plotting the starch-iodine color values against pH at temperature of 100 F, 160 F, 180 F, and 200 F. As expected from the thermostability data (*Figure 1*), increasing the pH favored high-temperature desizing. The optimum pH for desizing at 160 F is 6.0-6.5; at 180 F, 7.5; and at 200 F, 8.0 to 8.5.

An iodine color value below 20 for a cloth swatch indicates extensive desizing. It is evident from *Figure 2* that such desizing is realized under the following conditions:

Temp °F	Enzyme Conc liq/cc	pH	Time min
160	11	6.0-6.5	30
180	11	7.5	30

At 100 F, the desizing did not pass an iodine-starch color value of 60 and the optimum pH range was broad with equivalent desizing from pH 5.0 to pH 7.0. More time is required at this low temperature.

The data given in *Figure 2* show the change in optimum desizing pH at various temperatures using an enzyme concentration of 11 liquefons per cc, but it does not indicate the minimum enzyme level or the minimum time for satisfactory desizing at any given temperature. Such information can be developed by taking into consideration the data given in *Figure 2* and the results reported earlier (1). Then, optimum desizing conditions can be derived after selecting a desired degree of desizing (a starch-iodine color value of 50 may be adequate for commercial operation) and the desired desizing time.

Frequently it is important to know how much enzyme potency is retained during a desizing operation. In order to indicate the decrease in enzyme potency that may be expected, laboratory desizing was conducted with a fixed enzyme concentration of 11 liquefons per cc at three different temperatures (160 F, 180 F, and 200 F) and samples of the free liquid were assayed at 5-minute intervals for 40 minutes. The inactivation of the amylase was studied at two pH levels for each temperature; one pH was 7.0 and the other was the pH at which the enzyme shows maximum activity at the temperature under investigation. The results are plotted in *Figure 3*.

At each temperature the curves obtained at the two pH levels are practically identical. The data show that the enzyme is considerably more stable at 160 F than at

180 F or 200 F. After desizing at the pH optimum for each temperature for 20 minutes, the retention of enzyme potency was 95% at 160 F, 48% at 180 F, and less than 2% at 200 F.

Summary. A series of experiments have been carried out which serve to demonstrate the interrelationships of time, temperature, and pH value, and how these factors affect the efficiency of the desizing process. By proper application of the data presented, it should be possible to select those conditions most suited to a particular process which will result in an efficient and economical desizing operation.

Experimental Details

A. *Enzyme Analysis:*

The bacterial alpha-amylase employed in this work was Disastafor LCD*. Enzyme assays were carried out by the Sandstedt, Kneen, and Blish method (3) without pretreating the starch substrate with beta-amylase. The varnish color standard described by Redfern (4) was used to determine the end point in this analysis. Alpha-amylase potency is expressed in terms of liquefons (1) or DV (detrinizing value) units (5) and the conversion factor is 1 DV unit = 1.9 liquefons.

B. *Thermostability:*

The thermostability tests *(Figure 1)* were carried out at 100, 160, 180, and 200 F for 30 minutes; 100 cc of de-ionized or distilled water containing 0.5% sodium chloride and 0.2% penetrant (Triton X-100) was adjusted to the desired pH value and poured into a 300-cc Erlenmeyer flask, which was then atemperated to the test temperature. One cc of enzyme solution was added to yield a final concentration of 11 liquefons/cc. In those instances where the testing was carried out in the presence of sized cloth, the enzyme was added one minute after the addition of the 2" x 2" cloth swatches. At the end of 30 minutes the test solutions were analyzed for residual amylase activity.

C. *Desizing:*

The extent of desizing can be considered as a representative measure of enzyme activity. The cloth swatches described above were removed from the test solutions after 30 minutes of desizing and rinsed for 1 minute under running tap water. The swatches were then immersed in 25 cc. of iodine-potassium iodide solution (aqueous solution containing 88 mg of CP iodine and 40 g of potassium iodide per liter) for 10 minutes. The color value of the swatch was scored 3 to 5 minutes later on a scale in which 100 represents no desizing and 0 is equivalent to complete desizing (*Figure 2*). The use of this procedure in an earlier study (1) with Diastafor LCD (about 12,200 liquefons/cc diluted to 8 liquefons/cc for desizing) yielded the following iodine colors:

25	after	15 min
20	after	20 min
10	after	25 min
5	after	30 min

Photographs of such scored swatches were shown in the previous publication (1).

*Obtained from Special Products Division, Standard Brands, Inc.

References

1. DiCarlo, F. J., Coleman, R. J., and Odorkiewicz, C., How Does Your Desizing Measure Up? TEXTILE INDUSTRIES 122, 98-100 (May 1958).
2. DiCarlo, F. J., and Redfern, S., *Arch. Biochem.* 15, 333 (1947).
3. Sandstedt, R. M., Kneen, E., and Blish, M. J., *Cereal Chem.* 16, 712 (1939)
4. Redfern, S., *Cereal Chem.* 24, 259 (1947).
5. *TAPPI* 37, No. 7 (July 1954).

1 out of 10 yards woven in 1958 contained two or more fibers

■ U. S. Textile mills produced more than a billion linear yards of broad-woven fabrics containing two or more different fibers in 1958, according to the preliminary results of a survey conducted by the Bureau of the Census, Department of Commerce, with the cooperation of the Agricultural Marketing Service, Department of Agriculture.

On an over-all basis, fabrics containing blends or mixtures of fibers accounted for about 1 linear yard out of each 10 produced during that year, according to the report.* For fabrics that are primarily noncotton, the ratio was more than 1 in 4.

Man-Made Fiber Fabrics. Blending or mixing was most extensive in the man-made fiber broad-woven goods industry. In 1958 this industry produced nearly 700 million linear yards of fabric containing two or more fibers in which the principal fiber was man-made. This yardage represented 65 per cent of all blended production and 29 per cent of the total production in the man-made segment.

Three fibers—rayon, acetate, and the polyesters—accounted for virtually all of the blending in this area. All together some 348 million linear yards of blends utilizing rayon as the principal fiber in combination with one or more other fibers were produced in 1958. This was almost a third of the total yardage in blends. Fabrics produced from acetate and some other fiber reached the 200 million linear yard mark in 1958, or about 19 per cent of the over-all output. Taking rayon and acetate blends together, these fibers accounted for 550 million yards, of which about 320 million were combinations of rayon with acetate. Finally, polyesters were used as the principal fiber in 113 million linear yards or 10 per cent.

Cotton Fabrics. Blends, mixtures, and combinations in which cotton was the major fiber totaled some 334 million linear yards, or 31 per cent of the yardage containing 2 or more fibers. Proportionately, however, blending was relatively least important in the cotton industry, accounting for only 4 per cent of the total cotton broad-woven yardage in 1958.

Wool Fabrics. Blends or mixtures in which wool was the principal fiber amounted to only 55 million yards, or approximately 5 per cent of the total production of blends. Related to the total yardage of all-wool or principally wool fabrics, however, blends represented a rather significant 20 per cent.

Fibers Used. In the cotton broad-woven area, rayon was the fiber blended, mixed, or combined most extensively with cotton. In all, about half of this blended output contained cotton and rayon. An additional 20 per cent of the fabric production found cotton and acetate together; 10 per cent contained cotton and nylon; and approximately 5 per cent were blends of cotton and linen, and cotton and polyester fibers, respectively.

Among the blends of which wool

Continued on page 94

*"Broad-Woven Goods—Blends and Mixtures: 1958 (Preliminary Supplement), "Facts for Industry Series M22T-08 Supplement. For sale by the Bureau of the Census, Washington 25, D. C. Price 10 cents.

With this system which provides production and inventory control and market analysis data,

WE KNOW THE SCORE

The author with one of the several reports from the integrated production, inventory, and sales controls described herein, the key points of which are pictured on opposite page.

by William Taber
Controller
Katherine Rug Mills, Inc.

Exclusive

HUMAN NATURE being what it is, it's normal for a warehouseman to grab the handiest roll of proper style, color, and width when filling a cut order. That roll too often is a complete one resting on top of several others which already have been cut.

This doesn't happen anymore at Katherine Rug Mills' five warehouses. In fact, there are several other wasteful practices that have been eliminated in our operations. This is the result of a control system we have installed to cover production, inventory (finished, in-process, and raw materials) and marketing analysis. It might be said that in our operations we have "closed the circle."

Where does a transaction start? When an order is received? When it is placed in production? When it reaches inventory? When the raw materials are purchased to meet production needs?

Actually none of these phases can be properly tagged as the "start." All manufacturing and marketing activities are a "circle" . . . with any transaction in any segment having influence around the circumference.

In a corner of our offices is a compartmentized tub file filled with marginally grooved Keysort cards, which have been internally punched for several factors. The volume of the cards is not impressive to see.

Yet these cards are almost articulate in providing vital reports (both regular and special) to control our annual production of approximately a million and a half square yards of tufted rug materials. This represents a dollar volume of five and a half to six million.

As we gain experience with our system, it impresses us more and more with its ability to flexibly, immediately, and accurately come up with answers. A distributor may phone us that he has a chance to sell 5,000 square yards on a commercial job. But the customer is in such a great rush that he wants to pick it up at a nearby Katherine Mills warehouse with his own trucks. Do we have that much at that warehouse in the wanted color and width?

We can ask this distributor to hold the phone and in a matter of minutes give him his answer. Furthermore, our distributor can accept our answer with complete confidence.

If he says he's sending an order, then our grooved card records will immediately reflect this inventory reduction—so that tomorrow we won't be putting another distributor in hot water because our finished inventory records are days or weeks behind actuals.

In fact, such a transaction would automatically launch action along the "circle," with a production order being entered to replace this inventory in that warehouse.

Step One—The "Birth Certificate." Our controls get underway as each roll comes off the machine. A four-part, marginally grooved card set launches the recording of data by rolls. At the end of each machine is a supply of these sets, also a compact machine called the Data Punch.

An embossed master plate used in this unit simultaneously imprints on the face of the cards such pertinent data as color, style, and width, and automatically grooves the same information to the margin of the card, for later sorting.

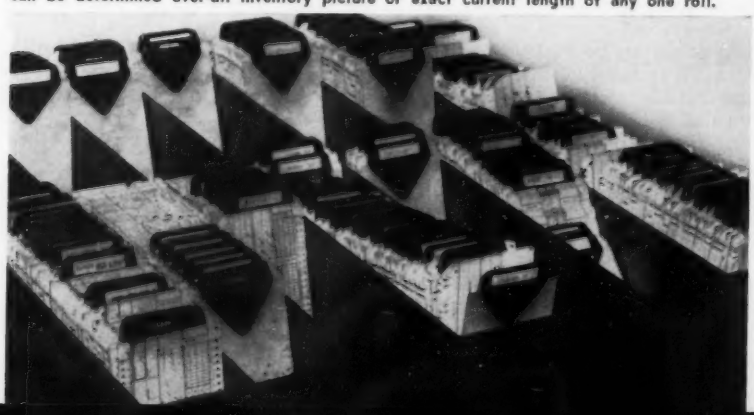
If the order is a special one for

The operative, working at a data punch station at the end of each machine, edge-notches and prints four inventory cards with the color, weight, and style of each roll produced.

COURTESY ROYAL MCBEE CORPORATION

Into this tabulating punch goes one of the inventory cards to receive, internally, code weight and length. This punch simultaneously accumulates figures, prints detail, and summarizes. Later, the same machine will automatically read, accumulate, summarize, and print at will. A nonadd key permits printing roll's identification number onto card.

Then the card is placed into the tub file, the nerve center of Katherine's system. From it can be determined over-all inventory picture or exact current length of any one roll.



a key customer, that customer's name also is imprinted. The length and weight of the finished roll is entered on the face of the set by hand. The original is attached to the roll and the remaining three are sent to the office. The sets are serialized, with each number becoming the roll's identification.

The second copy of the set is later attached to the customer's invoice, or if the roll is being placed in finished inventory, it will be attached to the invoice sent to the particular warehouse. The third copy is for file use.

Tub File Gets a Master Copy. The last copy, on heavy manila stock, is placed in the tub file referred to above and is the instrument that produces invaluable administrative reports. It is an automatic instrument because it is first processed through a tabulating punch.

This machine internally punches codes for weight and length. While doing so, it accumulates figures, prints detail on a tape, and summarizes at will. A non-add key permits coding the tape to the roll's serial number. Later the same machine will automatically read, accumulate, summarize, and print at will. This is why we can ask a distributor to hold the phone while we give him accurate and up-to-the-minute inventory data.

Take, for instance, our reference to cut rolls. Since we have such accurate controls, we can specify by number the roll to be cut; and we know the length in that roll. As soon as we issue such an order, we reduce the length left in a given roll and set up a new Keysort record in the tub file.

Raw Materials Records. To keep our operations integrated, we use a somewhat similar system in the control of raw materials—mainly jute, yarn, latex, and dyes. As soon as a unit of raw material is received we create a two-part card set. Again we punch in the vendor's name and description of material. The original is attached to the unit and the copy is sent to the tub files.

First, with the punch we internally code units and dollars. Thus we have on hand an accurate and

automatic perpetual inventory of raw material.

When a unit is used in production, the original is detached from the unit and sent to the office. There it is matched up with its companion which is pulled from the tub file. The material now transfers to work-in-process inventory.

Should the units be only partially used (as in the case of yarns) the remainder would be sent back to raw material stock, and a new Keysort record would be created as though it were a shipment from a vendor.

Thus, at any hour of the day we can in minutes automatically produce an accurate raw material inventory by classifications, number of units, weight and dollar value.

We extend the use of our Keysort records into production control and also adjustment and scrap. This is a story in itself. In fact, it is a system used in many manufacturing organizations.

Essentially, the virtue of our system is its integrated controls. As transactions and developments occur in one phase, action to be taken in others is automatically indicated. In brief, it can be said that we have the comfortable assurance that we are in pinpoint control of our operations.

A Few of the System's Advantages. There are specific advantages and we'll outline a few. Good inventory control, and ability to make quicker deliveries, lowers the required inventory needs of our customers. Nothing builds customer good will faster.

We are able to lower our own inventory investment. This applies to finished goods and raw material. In fact, we have lowered our inventory from ten to fifteen per cent, and feel we will make further improvements in this respect.

At the same time, we are doing a better job of customer service by having the right inventory in the right branch warehouse at the right time. We are making continuous progress in cutting down on distress and obsolete merchandise.

This brings us to our invaluable market analysis. From the card set we automatically produce a report of square yards sold, by style, color, and width. This is further broken down by warehouses. We also issue a report by sales source (saleman, distributor, dealer) by dollars and style.

We have about 20 active styles in approximately 10 different colors. These, of course, are in a constant state of flux, with 5 or more new styles introduced each year and others withdrawn. While we plan to introduce new styles semi-annually, our system is enabling us to keep closer to trends, change styles if our reports indicate certain ones are losing appeal.

Our market analysis helps us to advise sales representatives on especially active styles; analyze what each sales source is doing. With ability to automatically compute gross margin (by styles and by sales source) we can immediately spot when a certain sales source is no longer profitable to us.

Incidentally, this whole system is run by one girl with occasional assists here and there. The processing equipment is simple and economical. The average office girl can be taught to operate it with one demonstration. The tabulating punch, for instance, is activated by a ten-key keyboard and can be used by anyone capable of operating an ordinary adding machine.

After experiencing the comforts of the controls we now enjoy, one is inclined to wonder how we got along without these. The answer is, of course, that "today" is a different deal than "yesterday." A noted business writer recently said that two records would be broken in 1960. The gross national product would hit an all-time high . . . but so would business bankruptcies!

In short, when the rewards are high, the players in the game increase and the competition gets more rigorous. Knowing what is happening by the hour and by the day in your own business will be essential to playing the game in the "Fabulous Sixties."

Urges unified approach to short-term swings in domestic textile output

■ A TEXTILE economist has advised industry leaders that a unified approach to the problem of short-term swings in domestic production must be developed in order to correct a widespread public misconception regarding the control of foreign textile imports.

Dr. William H. Miernyk, director of the Bureau of Business and Economic Research, Northeastern University, and formerly staff director of the Senate Subcommittee studying the domestic textile industry, urged that both problems be faced simultaneously.

Speaking at a seminar at the two-day annual meeting of the Northern Textile Association, the economist said: "The argument is often advanced that if domestic industries were more 'efficient,' they would not need to fear foreign competition. This argument is typically based on ignorance of the facts, and upon grossly over-simplified economic theories which have little relevance in the world today. . . . the threat of imports is both real and urgent."

He outlined a five-stage management program to approach the textile cycle problem which he feels could help lead to a solution of the longer range problems.

Among the stages Dr. Miernyk suggests are: more up-to-date information on the volume of inventories owned by retailers, cutters, convert-

He outlined a five-stage management policies which will gear production to reasonable estimates of future demand.

"A number of industry leaders have urged industry-wide restraint in expanding production during the upswing of the cycle," said Dr. Miernyk. "But others in the industry have failed to follow this lead.

"If cyclical swings in production and prices are to be held to a minimum, it is essential that all units in the industry cooperate to gear production levels to reasonable estimates of future demand.

"If enough mills move to the six-day work week, and capacity production, during each upswing, others in the industry are forced to follow. Once this happens, it is safe to predict a relatively early downturn."

To get more uniform blends, a cotton mill tries an old wool carding idea—installs weigh pans on feeders

Weight vs Volume feeding of cotton

One source of yarn variation is bypassed with an automatic blending system that weighs and sandwiches its own mixes

by David Meyers
Head, Technical Services Dept.
Joanna Cotton Mills Co.

Exclusive

YARN variation or change in weight per unit length is considered the most important irregularity introduced in processing. It greatly influences both yarn strength and appearance and usually begins, or is introduced, in the early stages of manufacture. For that reason it is best to begin control in or near the first process, and Joanna Cotton Mills Co., Joanna, S. C., is attempting to do just that with a new fiber blending system now being given a shakedown cruise.

The automatic equipment consists of six individual weighing pans hung from the front of the old blending feeders. These pans with their electronic controls are synchronized with the blenders, the picker room, and the conveyor onto which the pans dump.

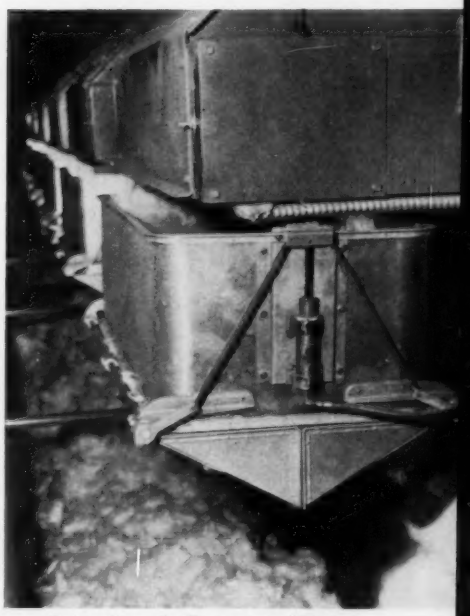
The weigh pans rule out the disadvantages inherent in the old type of volumetric feeder, which opened and disgorged high-density bales at a rate quite different from that of flat or gin-packed bales. Regardless of bale density, the weigh pans stay closed until they receive their prescribed weight of stock.

The conveyor is synchronized to move the load from one weigh pan to the drop zone of the next in time to catch the load from the second pan. In that manner a complete sandwich containing a load from each weigh pan is built by the time the conveyor leaves the last feeder. Accuracy is within ± one per cent.

Human error is almost excluded. From the time the stock is fed to the blenders until it enters the pickers it is under complete direction of the electronic control. This "brain" simply calls a halt to all opening operations whenever it detects an influence it can't manage. At such times it winks its signal lights until the operative comes to its aid.

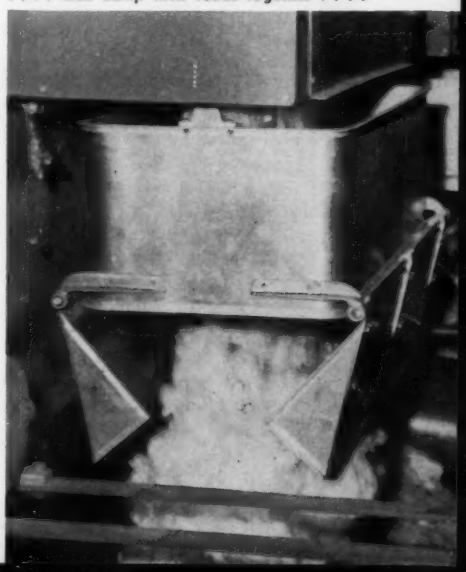
In the few short months the system has been under study, it has operated "very satisfactorily." But it is still under evaluation by the Projects Advisory Committee, which will eventually decide its position in variation control.

Garnell Floyd, Jr., loads the feeders . . .

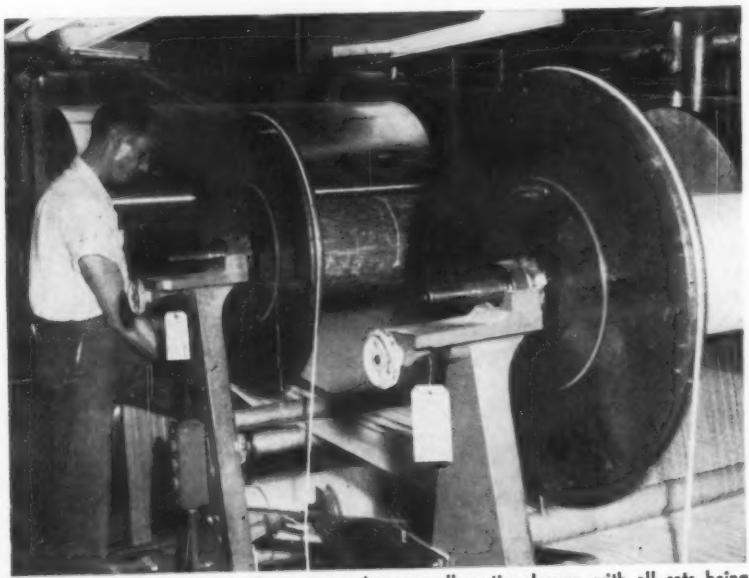


. . . that wait until all pans are full . . .

. . . . then dump their loads together . . . .



Daily checks by waste control personnel and supervisors discourage waste mixing. If the amount rises beyond the standard, all factors (including humidity) are checked for cause.



Every effort is made to get the same yardage on all section beams, with all sets being checked for even running tension. With all beam barrels visible, this is a good run-out.

Much of the reduction in waste at this mill is attributed to a number of ideas adopted in the cloth room. One is the use of a ring (on table in center of photo) on each grader's table to hold rags cut from fabrics. Rings are frequently inspected for an excessive number of rags.

How a

The Liberty, S.C., plant of Woodside Mills reduced its waste by more than two per cent over a two-year period, an excellent record in view of the type of goods produced, and anticipates an even better showing

by Don Garren
Waste Control Director
Woodside Mills

Exclusive

WE ALL KNOW that every pound of waste made costs money, that the effects of waste are lower efficiency, lower quality, increased costs, lower pay, increased workload, and lowered job security.

A successful waste reduction program requires the full cooperation of every employee from the sweeper to top management. Everyone must be encouraged to become and remain waste conscious and to realize the importance of reducing waste.

To promote this consciousness, everyone is kept informed by daily and weekly waste reports, posters, waste charts, waste comments in weekly bulletins, personal contacts between employees and supervisors, and other means. It takes close follow-up by the

weaving mill cut waste 2%

supervisors and waste control personnel to insure that no excessive waste is being made.

An extensive school was conducted and attended by all supervisory personnel, and a one-day review school was held. Goals were established for further reduction of waste.

Causes of waste were discussed and put into writing for every process and for every type of waste. All of these reports were compiled in a manual which was given every supervisor.

Here are some of the practices we adopted:

CARD ROOM

1. Keeping cotton as clean as possible
2. Making periodic checks of machine adjustments to insure that no excessive waste is made at each process
3. Keeping each type of waste separated
4. Labeling special cans (painted red) for each type of waste
5. Posting waste charts weekly

SPINNING ROOM

1. Labeling special cans(painted red) for each type of waste
2. Keeping departmental daily waste reports—departments do it.
3. Posting Pneumafil waste by set by spinner daily
4. Keeping thread waste off floor
5. Sandpapering section beam heads to prevent snagged ends.

PREPARATION

1. Checking tension on each set to insure even tension on each section for even run-out
2. Providing bags for each type of waste made on slashers and drawing-in
3. Using waste already made to tie onto new section beams, saving extra pull-over waste
4. Keeping daily waste report—department and waste-house man do this
5. Patrolling constantly both front and back to prevent laps and breakouts

WEAVE ROOM

1. Keeping close check on warp-out waste by providing bags and weighing and recording all waste made on each and every warp-out
2. Providing hooks and bags for all waste to be separated by categories
3. Furnishing aprons for battery fillers to keep thread waste off floor
4. Keeping daily and weekly waste reports to keep everyone informed

Continued next page

Waste control

(from page 85)

CLOTH ROOM

1. Keeping close supervision and follow-up of both weave room and cloth room supervisors (reduced rags tremendously)
2. Putting rings on graders' tables so that all rags can be checked
3. Cutting cloth on the defect to save a lot of rags

The Liberty plant has made a big improvement in its waste control program. The one big reason for this reduction in waste is that every employee acquainted with the problem simply wanted to stop so much waste. The program got the full cooperation from the supervisors and employees on every practice put into effect.

The gradual increase of waste is what everyone watches for. Immediate action is taken to bring waste back into line or under standards as soon as an upward trend is noted.

Textile outlook good, Combed Yarn Spinners told

But don't produce for inventory to maintain a position, Burlington Industries' official urged

Staff report

■ THE OUTLOOK for the textile industry is good and its potentials are encouraging, Jackson E. Spears, vice-president of Burlington Industries, told those who attended the 35th annual meet of the Combed Yarn Spinners Association at Sea Island, Ga.

Market hesitancy may be attributed to pressure of imports, decline in the national economic vigor, and slight overproduction, Mr. Spears said. Although there is no immediate solution for the problem of imports and the national economic situation, the industry can and should determine not to produce for inventory in order to maintain a price position, he declared. Many mills produce only for distribution immediately, and others are showing more favor to this simple and effective rule, according to the speaker.

Among other suggestions offered by Mr. Spears were the following:

► For the long range, political actions are needed. Politicians are accessible now. We must look coldly at their attitudes. We must have men in office who are sympathetic with textile problems and who act on a friendly basis. . . .

► We must have a revised program of depreciation allowances for machinery with a more realistic approach. The depreciation allowances adopted in 1942 were designed to increase revenues and have nothing to do with machinery life. This government-induced hardship demands relief. . . .

► Two-price cotton also represents a difficulty. We must get more cotton through free channels of distribution and be mindful of future restrictive legislation. . . .

► Support of the program on cotton quality is needed from those not already helping. . . .

► The industry should not adopt anything new merely as a sales gimmick. Many chemicals, new fibers, and finishes have confused the consumer and brought problems. . . .

► Accurate statistics on industry activity should be secured, and production should be controlled by the mills to balance capacity to consumption accordingly. . . .

► Recruitment of bright young men for the industry is needed, and improved public relations at the local level would be a step in the right direction. The industry, with approximately two million employees, is taking some right steps now, and we must forge ahead on the basis of just cause. . . .

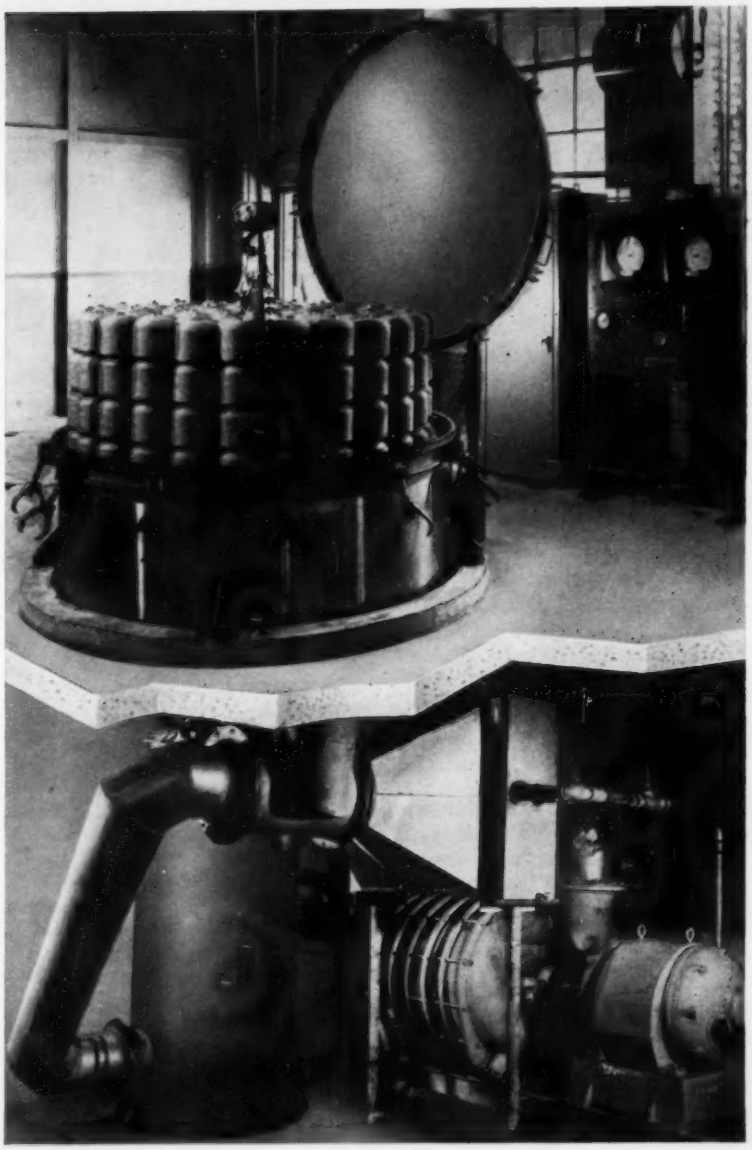
► Competitive losses to other lines seems to have stabilized, and prices note an upward trend with better profits if we can find the solutions to the problems besetting the industry.

A quality audit program was started by the Association in 1959 [TI for Jan., 1960, p. 85]. Mills aggregating 383,000 spindles are patronizing the service extended by the School of Textiles at North Carolina State College, according to J. L. Wright of Johnston Mfg. Co. who said the program has been useful to his company.

Officers of the Combed Yarn Spinners Association for 1960-61 are (l to r): **A. G. Meyers, Jr.**, Textiles Inc., Gastonia, N. C., first vice-president; **Shannon M. Gamble**, executive secretary; **J. L. Barnett**, South Fork Mfg. Co., Belmont, N. C., incoming president; **J. J. Hinds**, Botany Cottons, Inc., Gastonia, second vice-president; **A. W. Bell**, American & Efird Mills, Inc., Mount Holly, N. C., immediate past president; **M. T. Cameron**, A. M. Smyre Mfg. Co., Ranlo, N. C., treasurer.

Left: The extractor-dryer (built by Turbo Machine Co.) at Spinners Processing Co., at the front, looks just like the conventional extractor next to it, but has heating and recirculating unit beneath it, eliminating separate drying operation.

Below: Other half of story is hidden under floor, out of production area, as shown in this cutaway. It needs no compressed air, air-oil filters, or conventional air filters.



With new extractor-dryer, Spinners Processing Co. can

dye today, ship tomorrow

After a year's experience, Spinners Processing finds that the 2-in-1 unit cuts cycle time and improves yarn quality

by James H. Kennedy
Exclusive

"WE'RE running that machine around the clock and are darn glad we decided to be the guinea pigs for it," comments Chief Dyer W. E. Chapman.

"That machine" is the first installation of a new recirculating-type extractor-dryer, at Spinners Processing Co., Spindale, N. C. Plant Manager Horace Doan and Dyer Chapman—as the only men who have lived with the machine for a year—know what it can do on cotton yarns. (Note: Spinners processes only cotton yarn, but the extractor-dryer is designed to handle all types of fibers and blends.)

The extractor-dryer, which was publicly introduced in March of this year, was installed a year ago at Spinners as added capacity. Right next to it is one of the machines it replaces, a conventional extractor, and up the aisle is the other machine it replaces in the processing cycle, a port dryer.

Doan has been running close to 7,000 lb a day through the new machine, with an average cycle of

Plant Manager Horace Doan keeps the extractor-dryer busy on three shifts.

90 min for a 600-lb carrier load. Actual extracting-drying cycles vary from 35 to 120 min for Spinners packages up to 36 and 40 oz on standard 1⅝ x 6¾-in dye tubes. For knitting and weaving yarns, the cycle takes 85 to 105 min. Typical time for mercerized yarn, on a 500-lb carrier, is 35 to 40 min.

Comparative figures on the extractor-port dryer route: Extracting time alone averages 45 min, followed by 5 to 7 hr in the port dryer. The difference in time is enough to get in a winding operation.

"We can make better deliveries with such a time saving," Doan says. "In an emergency, we can dye today and ship tomorrow."

With the new combination extractor-dryer in place, the port dryer is used as little as possible. For lots that can't go through the new unit because it's busy, Chief Dyer Chapman prefers to extract centrifugally and tray dry rather than use the port dryer, even though this alternative takes eight to ten hours. "Sometimes we dry for 24 hr in the tray dryer," Chapman explains, "and still some packages are wet, others bone dry."

But the time saved with the new machine isn't its only advantage. Because the extractor-dryer recirculates conditioned air, the yarn never gets completely dry. This is a big advantage, according to Doan. "The hand is not harsh," he says, "and that's where the machine has helped us most—in yarn quality. We get softer, more uniform yarn from the standpoint of knitting and handling—it runs better. It's hard to measure winding, but our tests show better performance in the last part of the package."

Drying temperatures on the new machine range from 250 F to 300 F. Bleached yarn is processed at 250 F, and, according to Doan, "We can dry bleached yarn that our port dryer can't handle." Direct colors are handled at 250 F to 260 F. "But we don't do a lot of direct dyeing, and what we do is light work," Doan says. "Dye migration isn't a big problem in our type of operation."

A hard, singed sewing thread is the hardest type of yarn to process, Doan has found. Mercerized yarn (Durene) is relatively easy. The plant processes everything from 4s/1 to 60s/2 — carded, combed, mercerized, bleached, and dyed. The size of yarn doesn't make a big difference, not nearly so much as the size of the package.

Other advantages of the extractor-dryer result from the design. The heating apparatus, installed in the basement alongside the motor, adds no extra space. Thus the machine takes up the same 11 x 11-ft space as the pressure extractor. The port dryer requires 10 x 24 ft, plus another 6 x 10 ft for the air filter—both on the production floor. This adds up to a total of 421 sq ft for the con-

About Spinners Processing Co.

Spinners Processing is a modern yarn-processing plant specializing in mercerizing, dyeing, and bleaching. Yarns come from five spinning plants making carded and combed yarns. Products of these plants are sold by Johnston Mills Co., Charlotte, N. C. Spinners combined bleaching and dyeing capacity is 90,000 to 100,000 lb per week; mercerizing capacity is 140,000 lb per week. The plant's warp-bleaching machine has a capacity of 30,000 lb a week.

Dyeing equipment includes two 1,000-lb machines; two 500-lb machines; one each 300, 200, 100, 50, and 15; plus three 1-lb sample machines. The dye machines are serviced by gravity feed from the mezzanine mixing tanks. All are Turbo (Smith-Drum) kiers except for one 1,000-lb Gaston County unit.

The plant's laboratory makes routine color-matching tests (easily the most difficult problem in today's dye house), and color tests, plus Launder-Ometer, tensile strength, size, and knitting performance tests. Samples are sent out regularly to Johnston Mills Co.'s standard-conditions laboratory in Charlotte.

Spinners does most of its sales business with the outerwear and hosiery trade: On the dyehouse wall is a glass-enclosed bulletin board with a collection of top-quality sport shirts from some of Spinners' good customers. The idea—now widely used—is to display the end use of the yarn in process.

Plant Manager Doan, a native of Tennessee, is 49 and has 25 years of experience behind him in southern wet-processing plants. He's just observed his fifth anniversary as head man at Spinners.

ventional method, vs 121 for the new machine—less than ⅓ the space.

Also, in Doan's words, "hot, humid air isn't spewed out." This makes for a better place to work, and the difference is very real in summer. As another advantage, there is no condensation on the ceiling above the plant's extractor-dryer. In contrast, a dirty deposit of lint and fly covers the ceiling above the port dryer. The deposit means extra maintenance. Furthermore, comments Doan, "Who wants black Spanish moss hanging over his head all day?"

Handling is reduced, of course, because the yarn is transferred only once.

Currently Doan is "piping up" to reclaim the heat from the extractor-dryer. He hasn't as yet segregated steam usage for the machine; at any rate, he says, it would vary from plant to plant.

Process temperature is controlled automatically by the temperature of the air going into the blower—the right-hand gauge on the instrument panel (see picture). The left-hand gauge has two dials, one measuring the air temperature going into the yarn, the other the air coming out. Automatic cycle control based on the relationship between these two temperatures is reported to be about ready to market.

Automatic time-cycle controls are now used to reverse the direction of air flow, and shut down the machine, and sound a signal when the yarn is dry.

"We're very proud to have run this machine for a year without any maintenance," concludes Chapman. "There's nothing to go wrong. A little oil in the bearing on schedule—that's all we've done."

Too much electrolyte may cause bronzing of direct dyes, study shows

■ MOST package, skein, and piece dyers have experienced bronzing at some time or other. One known cause of bronzing is the precipitation of a dye, possessing this optical characteristic in the solid state, by the addition of excessive quantities of an electrolyte to the dye bath.

A study of the behavior of a direct dye was carried out, using time-lapse motion picture photography to record changes in the appearance of the dye bath and the fiber. These studies have revealed a mechanism whereby bronzing effects occur.

Direct Red 2 was used in these studies because it can be made to produce bronziness on cellulosic materials when it is precipitated from solution by high concentrations of common salt. Viscose rayon fibers were used in this study and common salt was added in increments of 10% (owf).

It was observed that at room temperature each addition of common salt caused the dye bath to appear lighter in shade when viewed through the Microdyeoscope* as

Viscose rayon fiber showing accumulation of fernlike precipitate caused by the use of excessive amounts of electrolyte.

though the degree of exhaustion of the dye was increased with each addition of salt, although the depth of shade on the rayon fibers remained about the same.

This change in the appearance of the dye bath was studied separately on viscose rayon dyeings using 2% of Direct Red 2, a liquor ratio of 40-1 at room temperature, and increasing amounts of common salt.

It was found that up to a concentration of 20% salt the bath remained deeply colored and was clear. When the concentration of salt was 30% or higher (30, 60, and 100% concentrations were used), the bath first appeared lighter in shade, was cloudy, and a precipitate separated on standing.

Examination of the dyeings after running 30 minutes at room temperature showed that the dyeing with 10% salt was the heaviest in shade, and the dyeings became progressively lighter as the percentage of salt was increased. Thus, when the depth of the dye bath became lighter, it was not due to increased absorption of dye but was due to greater aggregation of the dye molecules to the point of precipitation as the amount of electrolyte was increased.

This was confirmed by means of the Microdyeoscope.

It was observed that the precipitate which formed in the bath had great affinity for the fiber and attached itself in a fernlike form and held on tenaciously during a good part of the dyeing cycle. When such a dyeing was dried, the precipitate remained on the fiber as a thin film of pure dye and appeared bronzy.

With rise in temperature to the boil and with increasing time at the boil, the fernlike precipitate gradually dissolved, the bath became somewhat deeper in shade, and the fibers became deeply dyed. With sufficient time at the boil all of the precipitate dissolved and finally the fibers were clean and free of adsorbed dye.

If the dyeing is stopped before all of the precipitated dye has redissolved, bronzing may occur, with attendant reduction in fastness to crocking and wet-finishing processes.

When dyeing at low liquor ratios, as in pressure machines, the amount of electrolyte, i.e., common or Glauber's salt, should be reduced to a minimum in order to prevent precipitation of the dissolved dye.

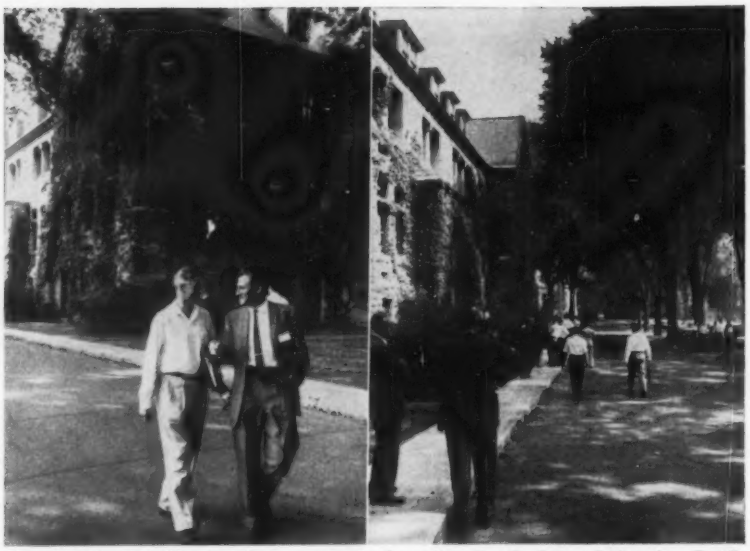
*An instrument invented by Dr. Henry E. Millson of the Dyes Department of American Cyanamid Co. Designed to facilitate the study of the mechanism of dyeing, the Microdyeoscope is described as a highly complex eye, with attachments for taking individual, time-lapse or motion pictures—all microscopically.
The instrument involves the use of basic cinephotomicrographic apparatus, plus such special attachments as these: a controller, called an Intervalometer, for making single-frame exposures at any predetermined interval, which can be adjusted to automatically take a photograph at time intervals ranging from one a second to one every fifty minutes; an optical vibration-free bench slider, with attachments to hold and to raise and lower the camera; a galvanometer connected to a light-sensitive cell for direct recording of light intensities; a heat absorbing glass filter to screen out infrared rays which heat the liquor in the cell to the boil and cause vibration of the fiber.—The Editors.

Reprinted by special permission from a recent issue of "Calco Dyelines," a publication of the Dyes Department, American Cyanamid Co.

Highlights of the 7th

Canadian Textile Seminar

Staff Report



Queen's University, Kingston, Ont., was again the setting for the biennial Canadian Textile Seminar, which this year attracted about 450 textile men from several countries.

SINCE 1948 the Textile Technical Federation of Canada has been sponsoring the biennial Canadian Textile Seminar as a means of bringing to Canada the latest information on technological advances in the industry. This year's Seminar, held in September on the campus of Queen's University in Kingston, Ontario, attracted more than 450 mill men, scientists, and technologists.

As in the past, the Seminar committees drew on authorities from many countries, who delivered more than 30 papers on subjects covering the conversion of fibers and yarns into woven and knitted fabrics, dyeing and finishing, and the all-important functions of mill supervision.

Abstracts of three of the papers follow.

High quality upholstery fabrics from man-made fibers

Of wide interest to fiber producers and fabric technologists was a stimulating talk presented by Boris Kroll, of Boris Kroll Fabrics, New York City, titled "Man-Made Fibers and Today's Home Furnishing Fabrics." Mr. Kroll traced the changing demands of the last three decades for fabrics of new design in keeping with a new mode of life and a modernist style of furniture.

Years of exhaustive testing of fibers, yarns, and fabrics have provided the Kroll organization with a storehouse of facts about the performance of man-made fibers in high quality upholstery fabrics, where aesthetic qualities and functional properties are of equal importance. Taking the man-made fibers individually, Mr. Kroll discussed their virtues and disadvantages. Their chief asset he pointed out at the outset is that their quality is precisely controlled.

Viscose Rayon: Versatile and Inexpensive. "We have found that the most versatile man-made fiber, and one with good durability, is the least expensive—viscose rayon. A long-staple rayon spun on the linen or worsted system has better resistance to abrasion. Spun on the wool system it gives a hand close to that of natural wool. Spun on the cotton system it gives a soft luster and a pleasingly supple hand. This is versatility.

At the same time, staple rayon absorbs dyestuffs evenly and in unmatched ranges of brilliance and color. It also lends itself to slubs, a major consideration in contemporary fabric design. It additionally offers excellent compatibility with other fibers—particularly in our latest combination, where viscose staple is blended with nylon staple to reduce the pilling of the nylon and increase the durability of the rayon."

Moreover, spun rayon can be treated to make it fire retardant, Mr. Kroll went on, a property which many hand-made fibers lack. And it is available in solution-dyed form. Thus, it is not surprising that 85% of all upholstery fabric manufactured in the U.S. contains spun rayon filling.

Filament rayon also occupies an important position. High filament counts of cuprammonium rayon are useful in warps, lending the fabric a soft pliable hand. However, cuprammonium must be used judiciously, Mr. Kroll said, under careful quality control. Among its problems are a low resistance to abrasion and its reluctance to accept dyes uniformly. In his own plant, it is skein dyed to eliminate

some of the problems in the application of color, but this is an added cost.

Filament Nylon: High-Priced Contender. The outstanding characteristic of filament nylon is abrasion resistance, a quality which is not always exploited by the fabric manufacturer. In this connection, the proper filament count and appropriate tpi are decisive factors, making the difference between a superior and a mediocre fabric. Nylon also has dimensional stability, accepts colors well, and can be treated with fire retardants.

But its chief disadvantages are cost and hand. At Kroll Fabrics, the laboratory has overcome the clamminess associated with nylon by application of a special chemical formulation to the nylon warp, which presents a pleasing hand and a subdued luster as well.

What of Other Man-Made Fibers? Mr. Kroll then passed on to a discussion of other man-made fibers, citing their advantages and disadvantages in the upholstery fabric field. Spun saran, he said, is inherently fire-proof and resists soil and abrasion, but offers a clammy, coarse hand that renders it unpleasant for use in upholstery. Moreover, it is limited to solution-dyed shades, and its high specific gravity gives it low coverage, to make it costly. As for filament saran, Mr. Kroll said that it is too much like a conventional plastic to be applicable to home-interior decoration.

Evaluations of acetate at the Kroll laboratories showed it to have no advantage over viscose rayon, and besides it suffers from low abrasion resistance and inability to withstand industrial gas fading in certain colors despite the use of gas inhibitors.

Recently, Acrilan has been introduced to the upholstery field. The Kroll laboratory found it to offer good soil resistance and good color acceptance, resisting abrasion as well as viscose, and resisting pilling when properly spun. However, it is relatively expensive and its hand lacks life and resiliency.

Presently, Mr. Kroll's laboratory is evaluating Orlon. The findings thus far point to its use in fabrics which attempt to simulate the look and hand of wool.

In concluding his talk, Mr. Kroll criticized the irresponsible promotion resorted to by certain fiber producers, which is bad for business and bad for public morale. His own company, he said, does not adopt a man-made fiber unless it has passed exhaustive practical evaluation.

He also strongly emphasized the need for properly educated fabric designers rather than for stylists. "It takes a trained fabric designer —a design engineer with a fully-developed aesthetic sense—to design a good upholstery fabric," he said.

Eliminate the picker lap?

The picker lap will disappear, and cotton processing will be continuous from opening through carding if a new development announced at the Seminar by Hans J. Klaeui of American Rieter Co. proves successful. This step in automation, developed by American Rieter's parent firm in Switzerland, combines opening, picking, and carding into a complete machine group, under automatic control.

These advantages are claimed:

1. Conventional blending is eliminated.
2. The picker lap is obsolete.
3. The cards are automatically fed, and so
4. There is no handling of cotton from the bale through carding.

The first machine in this new set-up, which replaces the blending feeder, is the Rieter "carousel." In the carousel, cotton is plucked by four beaters from twelve bales which move in a circular path over the beaters—like a merry-go-round, and hence the name.

Following the carousel — and there may be one or several— comes the Automixer, to which the cotton is transported pneumatically. This is primarily a mixer or blender for cotton from the individual carousels, and reworkable waste may be added here.

Next comes a cleaner and then the picker, but following the second beater section, no lap is formed—the cotton is carried in loose condition through ducts or "channels" and dumped into a vertical reserve box over the licker-in section of each card.

The cotton is under electronic control at every step. Variations in production between or within carousels are controlled by "tuft counters" in the ducts leading to the Automixers. The amount of cotton in the reserve boxes over the cards is controlled, and the excess goes to the backs of the pickers.

This opening-picking-carding organization is operating so far in only one pilot installation, and it was said at the Seminar that it will not be available in the United States for at least a year. It will not be applicable to existing machinery—the whole set-up must be installed as a unit.

Modern cotton fabric preparation . . . Is it adequate?

Present-day, high-speed preparatory operations came under critical appraisal in a talk delivered by Ernest Sewell, manager, converting operations, Wabasso Cotton Co., Three Rivers, Quebec. Though his paper was titled "Bleaching, Dyeing, and Finishing," his discussion centered on the influence of preparatory treatments on the quality of dyeing and finishing.

In normal practice, cotton piece goods receive the following treatments: singeing, desizing, boiling-off or scouring, bleaching, and mercerizing. It is Mr. Sewell's belief that far too little attention is being paid to the desizing operation, which should give the fabric

Building a manned orbiting space craft utilizing coated organic and metallic fabrics is not only feasible, but offers many advantages, according to Goodyear scientists. Such a structure, of doughnut shape, is shown in final stage of building. Individual cells have been lifted into orbit in compact packages, inflated into shape by internal pressure, and connected so personnel can walk freely from one cell to another. Last cell has been brought to orbit by cargo freighter and is being worked into position. Details on page 115.

a proper preparation for boiling-off and is important in minimizing creasing in subsequent processing.

The most common methods of desizing employ enzymes, which promote the solubilization of starches, and which can be applied in two ways: First, the fabric can be padded in enzyme and wetting agent and then steamed at elevated temperatures; or, second, the fabric can lie for a prolonged period of time after padding. Enzymes are selected to suit the particular temperature range of the process. In pad-steaming, a high-temperature enzyme must be used, but temperature must not exceed 165-170 F; while in the storage process enzymes that function at lower temperatures, around 90-100 F, are used. In practice it has been found that steaming can be completed in 10-20 minutes, while the storage process can be completed in 4-6 hours.

In referring to the next process, boiling-off, Mr. Sewell designated it as being of number one importance. The most efficient method of obtaining a well boiled-off fabric is by the use of alkali treatments for a period of time at an elevated temperature. Pressure kier boiling, he said, was a complete success but because it was time consuming, requiring approximately 10 hours, and moreover, involved a high labor cost, it has been largely replaced by shorter methods, which consist of the application of alkali, followed by steaming in open width or rope form.

This high-speed method provides only a semblance of a boiled-off fabric. "The present-day short methods on the modern available equipment have a long way to go as a means of boiling-off cotton fabrics to the proper degree, particularly where heavy type goods and highly twisted yarns are concerned," Mr. Sewell said.

The nearest approach to the pressure boil, according to Mr. Sewell, is the continuous boil-off jig. He also spoke with some optimism of the new model continuous pressure vessel recently revealed to the trade, which may provide a means of improving boiling-off and still fit into a continuous preparatory system.

In treating the next process, bleaching, Mr. Sewell stated that too much attention was being given this step in present-day processing because of inadequate desizing and boiling off.

"We are inclined to proceed with half desized and half boiled-off fabrics, and to try completing these operations by the lavish application of bleaching agents, plus alkali at high temperatures. This makes for high chemical costs, and to keep bleaching costs to a minimum, desizing and boiling off operations must be complete. Regardless of the nice appearance of a bleached fabric for dyeing, the dyed result will be unsatisfactory if the desizing and boiling-off is incomplete, resulting in poor penetration, unevenness, migration when the pigmented vat colors are used, also every type of cloth manufacturing fault will be emphasized to the full," he said.

In Mr. Sewell's opinion, mercerization should be the final operation because the fabric is highly absorbent for uniform penetration of alkali, and moreover, mercerization improves the physical condition of the fabric by removal of creases caused by preparation.

Following his talk Mr. Sewell answered questions from the audience. Some of the questions raised and the answers given:

Q. Does the kier boil process destroy motes?

A. In kier boiling it is possible to destroy motes completely. In present-day processing they are merely bleached out—but they still remain.

Q. Is the poor absorption of terry toweling due to the shortness of preparatory processing?

A. Yes. There is much work being done in dyeing but we still have the basic problem of getting an absorbent, clean cotton. It is very easy to get a piece of cloth white.

Q. Couldn't the poor absorbency be due to softeners?

A. That would depend on softeners used. However, I believe the problem is a basic one.

Q. How do you compare enzyme and caustic desizing?

A. Enzyme desizing is better and a little quicker acting.

Q. Has the traditional grey sour been discontinued altogether in present preparatory operations?

A. The grey sour is not used today as it was in the conventional kier boiling sequence of operations. In present-day processing it is used to remove metallic compounds and thus prevent "pin holes."

Don't neglect spindle lubrication

Supervisors of Harriet & Henderson Cotton Mills find it pays to make frequent inspections to insure use of proper lubricants and application techniques

Exclusive

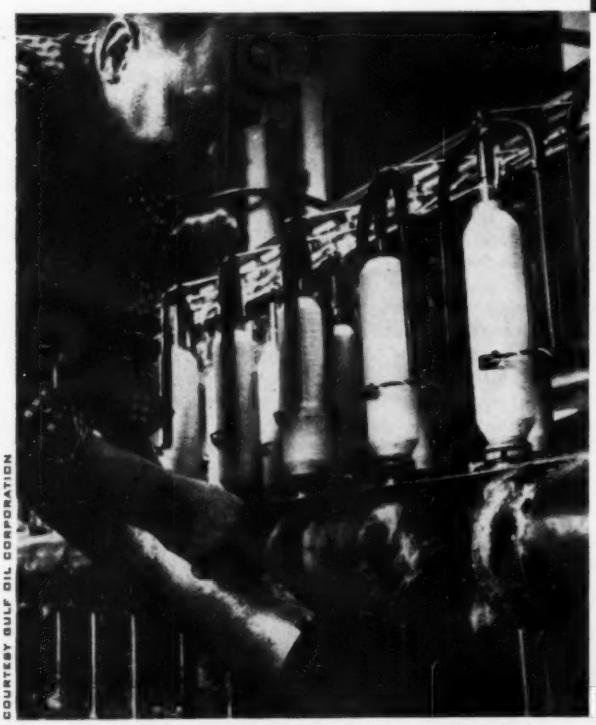
DOES THE quality of lubrication in a textile mill affect the quality of the finished product? According to Z. K. Kelly, spinning foreman of the Henderson mill of Harriet & Henderson Cotton Mills, Inc., Henderson, N. C., "Poor lubrication will cause a drag on spindles. The consequent lag causes a lack of uniform twist which in turn causes more ends down per thousand spindle hours. Poor lubrication also decreases yarn strength and increases power requirements."

Harriet & Henderson operates 99,012 spindles producing 500,000 pounds of yarn per week, so spindle lubrication receives close study. How well the firm has succeeded is suggested in a trio of spindles, one new, one four years old, and one five years old, that Foreman Kelly likes to display. All three spindles look new.

Five years ago the firm adopted a spindle oil that prevents gum and sludge formation, maintains its load-carrying ability, and retains its viscosity stability. The spindles average 9500 rpm.

Harriet & Henderson checks the oil level in plain-bearing spindles monthly, in ball-bearing spindles annually, and removes and cleans all spindles and bolsters every five years. But spot checks show that the spindles do not need their former five-year cleaning. The firm now plans to run them indefinitely, with occasional spot checks to head off a possible downward turn.

Other past troubles have cleared up with the use of the proper lubricant. On the fly frames, bobbin



COURTESY GULF OIL CORPORATION

Cover is removed to display the conditions under which a lubricant must function in the bobbin and spindle gears and shafts of a fly frame. The lubricant adopted cut into wear here.

The firm produces a half-million pounds of yarn weekly on 99,012 spindles that after five-year run still have clean oil in bases.

Lithium-base extreme pressure lubricant stays on the harness cams for the full two-week lubrication cycle—it does not sling off.

and spindle gears and shafts wore severely under the combined actions of speed, load, and lint. Many shafts had to be replaced during the two-year fly-frame overhauling cycle. A lithium-base, general-purpose lubricant that neither cakes nor is slung off the gears has definitely reduced wear at those places.

Similarly, a lithium-base lubricant formulated for extreme pressures stays on harness cams for a full two weeks before it is used up. It too is not thrown off.

1 of 10 yards woven *(from page 79)*

was the chief fiber, nylon was the principal added fiber; this combination represented almost half of the blended output in this area. Rayon fiber and polyester fibers were a rather weak second, with each accounting for approximately 11 per cent, followed by the wool and acrylic fabrics (8 per cent).

Rayon-acetate blends accounted for half of all production containing principally rayon and one or more other fibers. Rayon and cotton, which aggregated 15 per cent of the total, was the only other important grouping in the rayon area.

The same two fibers predominated in the production of blended fabrics in which acetate was the major fiber. Acetate-rayon fiber represented 70 per cent of the total, whereas acetate and cotton accounted for 18 per cent.

In the case of fabrics produced with polyester fibers and one or more others, cotton was the principal second fiber in 1958, with polyester-cotton fabrics representing 56 per cent of the total blended with polyesters. A three-way combination of polyester fibers with wool and cotton accounted for 15 per cent, followed by polyester-wool and polyester-rayon (12 per cent for each).

The principal additions to acrylic fibers were rayon (39 per cent) and wool (34 per cent). Acrylic-cotton fabrics were next, representing 14 per cent of the total, followed by an acrylic-nylon combination (6 per cent).

Where nylon was the major fiber, no other single fiber turned out to be the overwhelming blend choice. Nylon-cotton fabrics and nylon-polyester fabrics each accounted for about one-fourth of the 1958 output of blended fabrics made with nylon and some other fiber. Nylon and rayon held an additional 12 per cent of this yardage, as did a mixture of nylon, cotton, and rayon. Finally, fabrics of nylon, cotton, and polyester fibers accounted for 6 per cent of the total.

Proportions. The proportion of the major or principal fiber in fabrics containing two or more fibers ranged from 90 plus per cent to less than 50 per cent; the bulk of the blended production however, was concentrated in fabrics containing between 50 and 80 per cent of the principal fiber. Out of every 10 yards blended in 1958, approximately 3 yards consisted of blends in which the chief fiber was less than 60 per cent of the total; a similar proportion (3 yards in 10) fell into the 60-70 per cent grouping for the first fiber; and an additional 2 yards ran to 70-80 per cent. Filling out the extremes, some 2 yards in 10 contained 80 per cent or more of the major fiber.

About 83 per cent of the blended cotton fabrics contained between 50 and 70 per cent cotton.

In wool blending, there were larger percentages of the major fiber used in 1958. Approximately 45 per cent contained between 80 and 90 per cent wool.

In the area of the man-made fibers, blends containing principally rayon ran the gamut of the percentage combinations. Thus, 23 per cent of the blended rayon fabrics contained 90 per cent or more rayon, 28 per cent were in the 70-80 area, and 19 per cent, respectively, in the 60-70 and 50-60 groupings. Fabrics in which acetate was the major fiber were more concentrated, with 20 per cent in the 70-80 area, 31 per cent at the 60-70 level, and a similar proportion in the under 60 category. The range for polyester blends was even more restricted; about 53 per cent of the 1958 production of blends containing principally a polyester fiber consisted of 60 to 70 per cent polyester.

*by Henry R. Hamilton**
Exclusive

TAPERED INTEGRATION IN TEXTILES *means*

"backward" acquisition of feeder plants to supply the minimum of chemicals, fibers, etc.

THE ECONOMIC situation existing in the textile industry during the past decade has spurred a number of textile firms to diversify and to integrate their operations. Integration in both the forward and backward directions has been common but has seldom carried the firms involved outside the textile industry proper.

Most textile corporations have chosen not to integrate forward past the finishing stage, nor backward further than spinning or weaving. Similarly, diversification has been within the textile industry itself rather than into other areas.

Unless one considers that these efforts have finally borne fruit with the recent price rises in the industry, they have not, on the whole, been successful. That is, the profits of the integrated and diversified textile manufacturing corporations have not been significantly higher than those of unintegrated corporations and seldom approach the average for manufacturing industries in general.

Tapered Integration. In recent years a few textile firms have begun to acquire, outside the textile industry, manufacturing facilities that are capable of supplying some of the basic inputs to their textile manufacturing functions. It is not known whether these firms had the concept of "tapered integration" in mind when they decided to integrate these facilities. However, "tapered integration," as it is described herein, would appear to be a method whereby many textile firms, particularly the larger ones, might improve their profit levels.

Tapered integration is a type of backward integration through which a manufacturing corporation integrates facilities capable of producing goods consumed by its manufacturing operations. In the textile industry, examples of such goods might be textile chemicals, dyestuffs, fibers, or machinery.

This type of backward integration is distinguished by the "upper" limits placed on acquisitions. Only enough capacity is purchased in the so-called "feeder" industry to supply the parent company when its basic manufacturing operations are producing at their *lowest* levels, as during a period of recession.

For example, assume that a textile corporation consumes 100 units of a particular commodity during the average year. Further assume that during periods of peak output the corporation consumes approximately 110 units, and that during periods of recession it uses approximately 80 units of the commodity. If this were the case, the integrating firm would purchase no more than enough capacity to manufacture 70 to 75 units.

Thus, during periods of recession, the firm would manufacture nearly all of its requirements for the input in question, but during periods of high output would purchase a substantial portion of it. During all periods the "feeder" facility would operate at full capacity.

The beneficial effects that tapered integration can have on the over-all profit level of a textile firm can be easily seen. The textile industry is surrounded by many "feeder industries," a number of which are quite profitable and a number which might be so if they could be kept operating at capacity. If manufacturing facilities in these profitable sectors of the economy could be successfully integrated and maintained at full capacity, the result would certainly be beneficial to the economic position of the textile company concerned.

What to Select. It is very difficult to outline all the steps that might be required to determine the applicability of tapered integration to a specific textile firm without knowing the characteristics of the firm which desires to carry out the program. But, at the risk of over simplification, it may be stated that any textile firm considering tapered integration should devote at least some effort to studying the following five factors:

1. The selection of manufacturing areas into which the textile firm might profitably integrate.

2. The definition of the characteristics of suitable facilities within the areas defined in Step 1 above.

3. The decision as to whether to purchase a going concern or build a new plant.

4. The pitfalls that might be associated with integrating the operations specified by Steps 1 and 2.

5. The outlining of a long-term policy regarding tapered integration.

The first step which a manufacturing firm desiring to embark on a program of tapered integration should accomplish is an analysis of

*Department of Economics, Battelle Memorial Institute.

the inputs to its manufacturing processes. The information for this could come from company purchase records or similar sources.

If it is discovered that any one input or combination of inputs is or could be manufactured by one company or manufacturing facility, then this particular set of inputs would be selected for study in detail.

Of course, to accomplish this step might require a rather broad knowledge of the technical and economic factors inherent in a number of industries.

However, this should not be a major obstacle, because if this knowledge were not possessed by members of the corporation's staff, professional advice could be sought from an outside organization.

Once a group of areas into which integration might be technically feasible is defined, the profitability of these areas should be studied. Also, other economic characteristics of the "feeder" industries—such as barriers to entry —should be investigated.

The chief aim of this part of the study should be to seek out the most profitable areas into which a firm could integrate and utilize all or the majority of the outputs of the firm or factories that it might purchase or build.

Once the general economic areas into which the textile firm might integrate have been selected, it is necessary to define the significant characteristics of the firm or facility to be acquired. Such economic factors as capacity, condition of plant and equipment, location, and other important characteristics would require investigation. Again, this step might require a rather broad knowledge of the technical and economic factors involved in those "feeder" industries being evaluated.

Purchase or Build? A textile firm desiring to integrate manufacturing facilities producing the type of goods it currently purchases may either build these facilities or purchase those of corporations that are already in business. There are several advantages associated with purchasing an established and operating facility.

For instance, most textile organizations would probably have difficulty establishing a new industry in which the operating modes and technology are strange to its current personnel. Buying an established facility would supply the needed personnel.

In addition, if the type of manufacturing facility being considered for integration produces by-products that could not be utilized by the integrating firm, purchasing a going concern with an established sales function would in large measure insure the disposal of these by-products.

On the other hand, within definite technical and economic constraints, building a new facility would offer the advantage of being able to design the exact type and size of factory needed. Also, it might be possible to locate a new manufacturing plant in a more advantageous position with regard to the parent corporation than any which are currently in operation.

Pitfalls. Most worthwhile plans have some drawbacks, and tapered integration is no exception. There are a number of pitfalls associated with tapered integration, and firms considering a program of this type would do well to keep them in mind.

For instance, when selecting an area into which to integrate, the textile firm should study this area carefully to insure that the products of the firm to be purchased or created will not become obsolescent in the near future.

Also, when a firm integrates facilities to manufacture a particular product it formerly purchased, it must insure that during periods of peak output it will have an adequate supply of the product. This may not always be as easy to accomplish as it may seem, for during periods of widespread prosperity, the product in question may be in short supply.

A firm that manufactures a substantial portion of its own inputs would probably be on the lower part of any sales priority list that might develop.

Thus, tapered integration introduces a certain amount of inflexibility into the textile organization. In spite of this, alert management should be able to avoid most of the pitfalls associated with tapered integration and use the scheme to improve the profit level of their textile firm.

Once the general areas in which the application of the tapered integration principle should prove profitable have been outlined, and the desirable characteristics of the firms within these areas are defined, management should devote some attention toward evolving a long-term policy regarding tapered integration.

Of course, solidification of any policy may await the outcome of the first venture of this type. However, one of the possible policy decisions might be that the textile firm enter "feeder" industry after "feeder" industry until it supplies virtually all of its inputs. If a firm found that any one or combination of its integrated facilities was particularly successful, it might enter this field as a producer of goods for sale to the general manufacturing economy.

Summary. The suggestion set forth in this article is very simple and certainly is not entirely new in concept. The textile industry is surrounded by a number of "feeder" industries that are characteristically more profitable than the textile industry itself.

Since large textile firms may consume the output of one or more factories or companies in the "feeder" industries, it is reasonable to suppose that integration into these industries could be profitable.

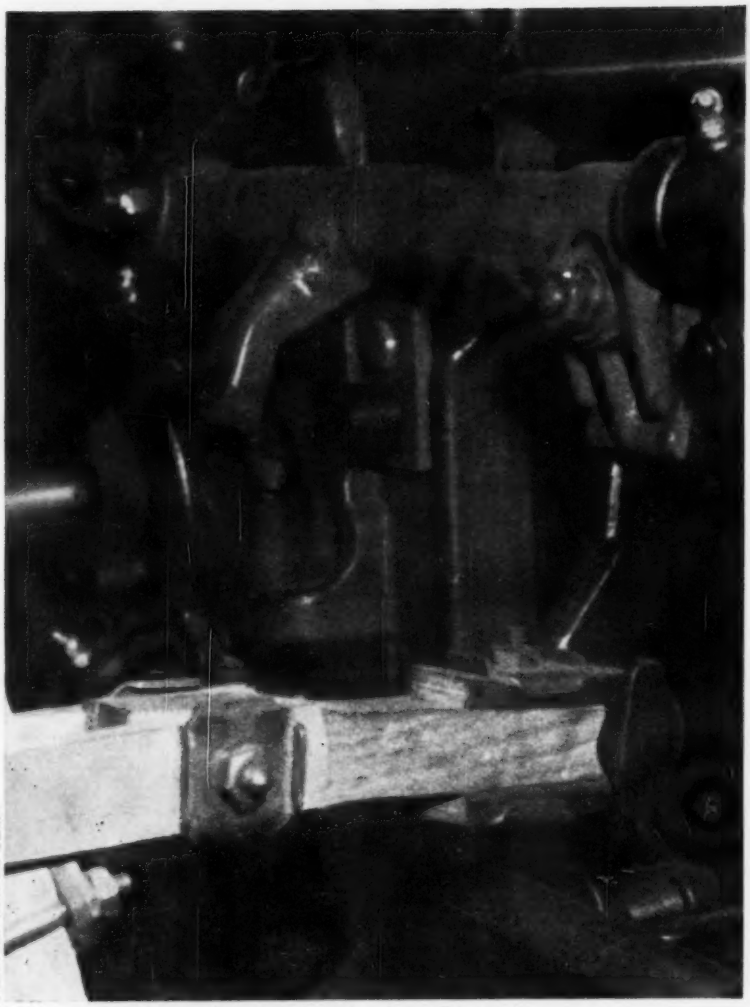
At least at the conception of this plan, the textile firm would not enter these fields as a producer of goods for sale to the general manufacturing economy, but would integrate facilities as captive operations and utilize their total output. The textile firm should be able to insure that the newly acquired captive operations would be run at a level approaching full capacity.

The effect on the over-all profitability of the textile organization that integrates a facility in a highly profitable industry and operates this facility at full capacity can easily be seen. Through establishing a well conceived policy concerning tapered integration and avoiding obvious pitfalls, large textile firms could significantly raise their profit margins.

GAUGES in Draper loom maintenance

Why loom gauges are needed in the mill and how to use them

Staff prepared Exclusive



COURTESY DRAPER CORP.

Pick shaft bumpers take various forms. This type is gauge-set.

Article 9—Finding and keeping adequate picking power*

ONCE the fixer has rebuilt the picking motion, he has no trouble visualizing the few steps he must take in checking pick motion settings. To begin with:

Remove the pick cam toe, pick shaft, pick shaft boxes, and parallel motions and clean the metal parts well enough to support a close examination of their wearing surfaces.

Discard the pick ball stud (don't hesitate to let the shop remove the old and install the new one) if it is "out of round." If the pick ball then rattles loosely on the new stud, or it shows pits in its outer surface, discard it for a new one (the pits simply devour a cam toe).

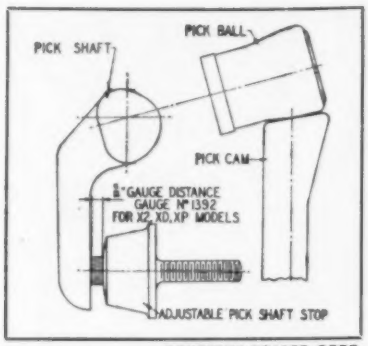
If in doubt about these two members being worn badly enough to merit scrapping, try them for another cycle. But bear in mind that pick ball looseness lets lubrication escape with consequent acceleration in wear. A couple of cycles will tell.

Examine the rear pick shaft gudgeon for evidence of galling and for the out-of-round condition that says the shaft is done. Don't try to nurse a pick shaft with an ailing rear gudgeon through another cycle—it not only takes a terrible beating, being so close to the pick cam, but its wear produces a power loss out of proportion to similar wear of the front gudgeon. If it is *necessary* to nurse it through another cycle, fit the worn ends with new boxes.

There should be no rattle, other than the minute freedom left for lubrication space, neither in the pick shaft assembly nor in the pick ball and pick stud after they are bolted in place, so proceed to reinstall them with care.

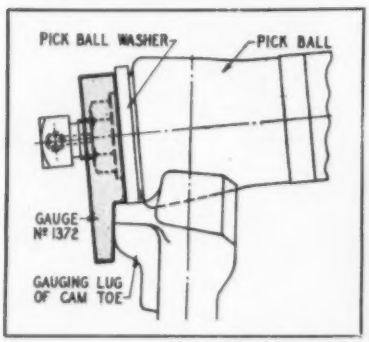
The pick ball and pick stud probably will fit together without trouble, but there is nothing necessarily automatic in the way the boxes and pick shaft fit up. Fit these with care, file the boxes if necessary, to give perfect alignment and check the final assembly for bind by raising the pick

*The first article in this series was published in the January, 1960, issue. Parts 2, 3, 4, 5, 6, 7, and 8 appeared in the February, March, May, June, July, September, and October issues, respectively. After the complete series has been published, the articles will be reprinted in book form.



COURTESY DRAPER CORP.

How the bumper for the pick shaft shown on the preceding page is gauged.



COURTESY DRAPER CORP.

How the machined pick cam toe is gauged to the pick ball (these are available for the X-2 loom). With the gauge, this setting is made with the loom positioned for the pick timing gauge, cam, instead of the previous position of pick ball resting on top of the pick cam toe.

ball and letting its weight rotate the shaft as far as the cam rim permits. Get all the bind out before leaving—few things will teach the incautious fixer so much in so little time as to have the pick shaft at the battery end start binding after the loom is returned to production. Jam the pick arm to its shortest setting and tighten in place.

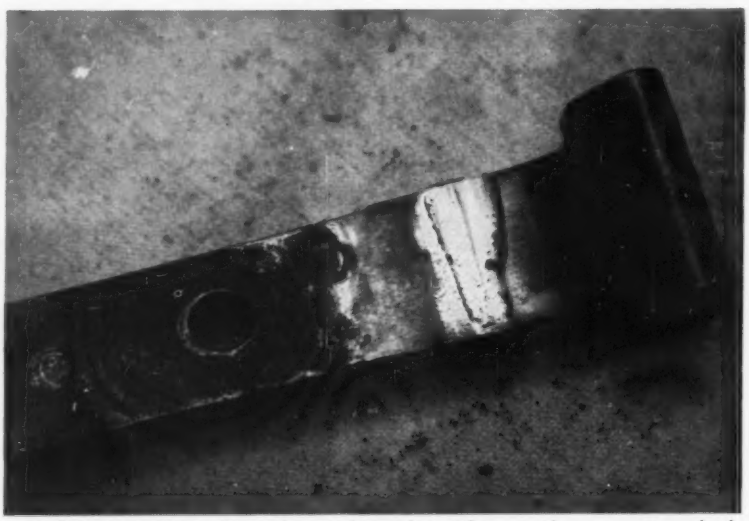
Fortunately, the pick shaft boxes do not slide around the loom as they once did under the pounding. But a Model E that gives that trouble can be "disciplined" by using ½" bolts through the boxes.

The parallel motion can kill a surprising amount of power if allowed to wear out:

The tongue can wear, or the block or roller can wear, enough to let the picker stick turn in its slot ever so slightly. Then the shuttle does the rest by beating a slightly twisted picker around until the stick is cramped against one side of the slot.

(To be continued)

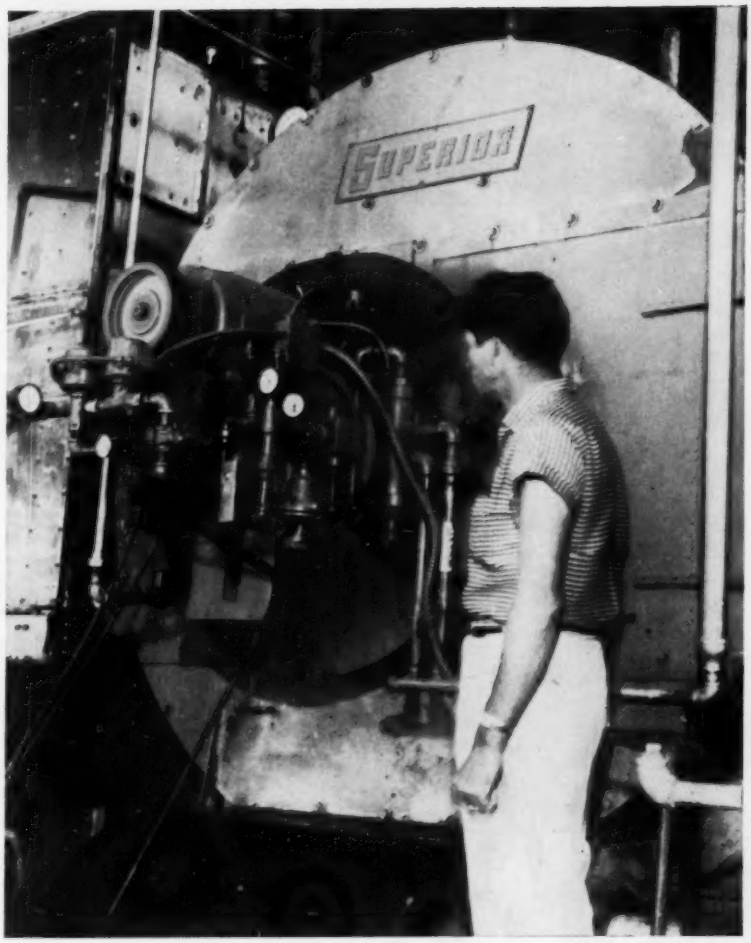
A pick ball that has received as much wear as one should. Note the pits that are forming.



A parallel tongue that could not keep picker stick straight—note the wear pattern, depth.

A parallel foot that "stole all the power" long before it was replaced. This is exhaustion.

Jefferson Bleachery replaced two old boilers with a single new one, saved a whopping amount of fuel and needs no full-time fireman



Bleachery trimmed $16,000 off annual fuel bill

Staff prepared

Exclusive

A NEW 600-hp oil-fired boiler installed at Jefferson Bleachery, Jefferson, S. C., last March has cut fuel cost substantially. Replacing two 145-hp boilers, which consumed 2700 gallons of No. 6 fuel oil in 24 hours, the new boiler under heavy load uses about 1900 gallons in a like period.

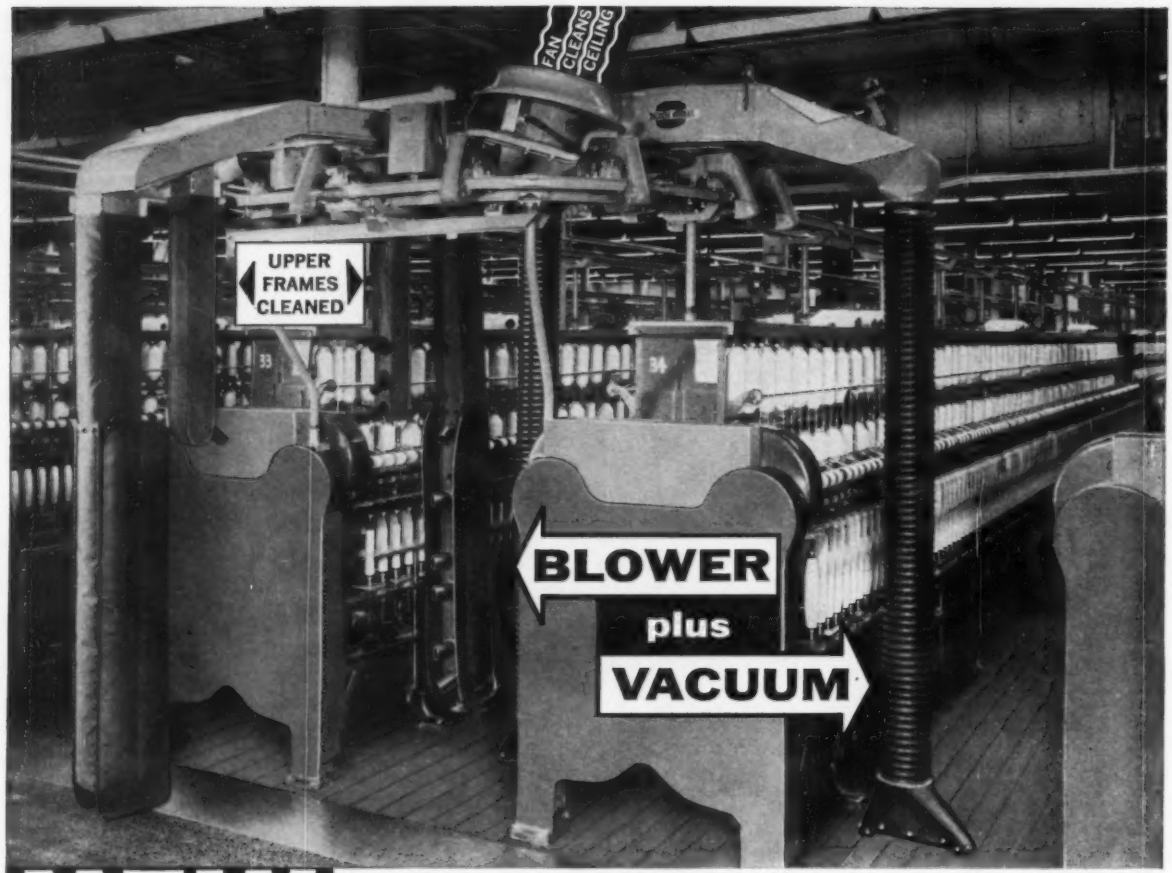
Operating at 125 psi, the boiler supplies steam for the entire finishing plant operation, with most of it being used to heat water for dyeing, bleaching, and soaping knit goods. A large hot air dryer (65′ long) is equipped with a 125-hp heater for drying goods in continuous strand at temperatures up to 340 F.

Fully automatic in operation, the new boiler requires no operator nor constant watch. Formerly, one man on each shift was required to operate the two old oil-fired boilers, and these men did nothing but watch the boilers. Now, no boiler operator is required, but a mechanic looks in on it now and then. Watchmen are employed on weekends for insurance reasons.

Oil savings amount to about $16,000 per year, and added to labor savings this would amortize the investment in about 1½ years. The new boiler takes only half as much space as the two old boilers.

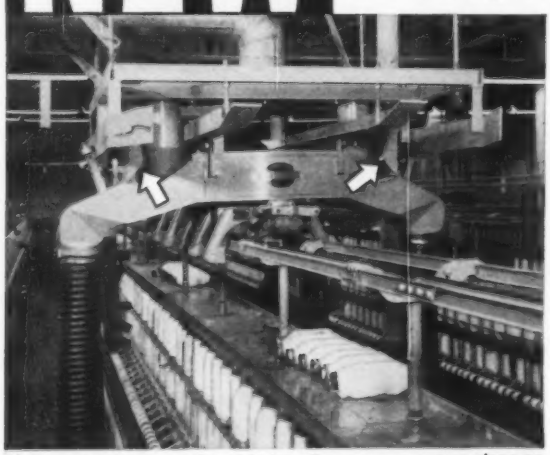
Better quality and production are a result of the new installation also, according to mill officials at Jefferson. This improvement is attributed to the fact that the new boiler makes drier steam to help increase temperatures and provide more uniform heat throughout operations.

The 600-hp boiler has a much greater potential than is used at present, being capable of burning about 180 gallons of fuel an hour. Current consumption is in the range of 115 gallons an hour. An expansion program at the bleachery further emphasized the need for a more efficient boiler of greater capacity to take care of increasing demands.



NEW

Keeps yarn cleaner
Keeps floor cleaner
Boosts profits



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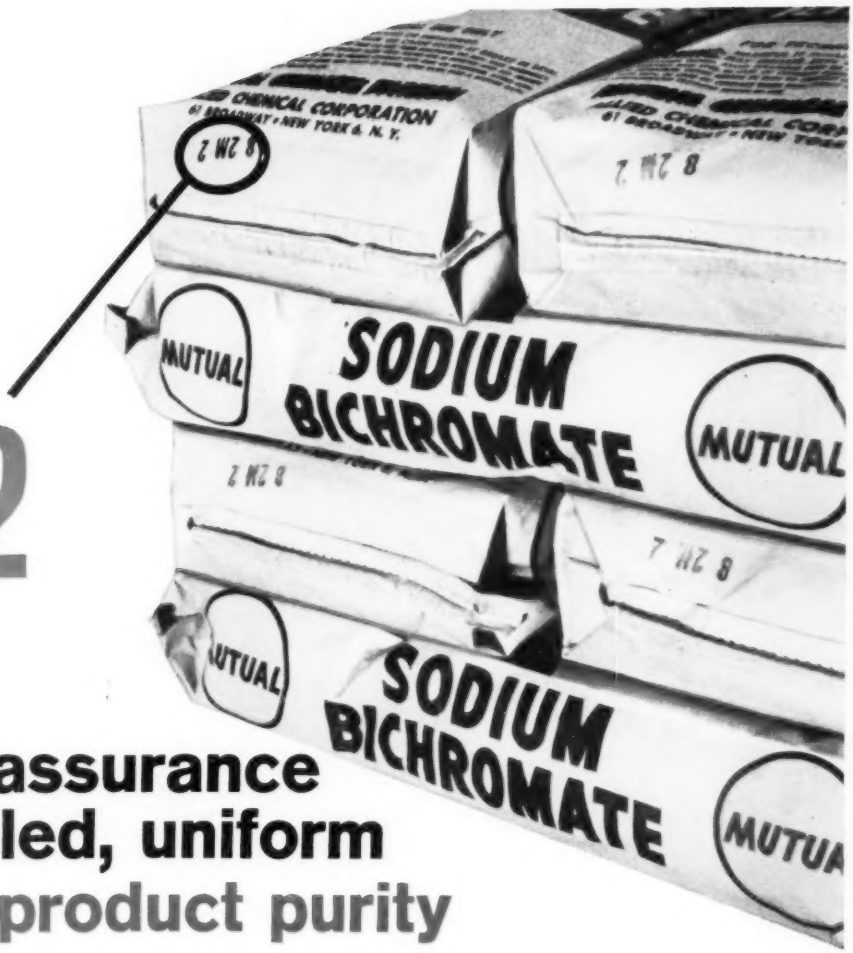

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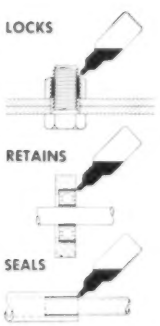

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Choosing the Best Draft

Mills can use this study to more profitably balance the factors of cost and quality in allocating drafts from picking through spinning

by Jack Simpson, Arsema T. Callegan, and C. L. Sens
Southern Regional Research Laboratory[1]

Exclusive

Part 2—Short Staple Cottons[2]

Important Findings on Short Staple Cottons

► For short staple cottons, using the double apron long draft spinning system, more care should be used in selecting spinning drafts than drafts in the processes which come before spinning.

► Many mills are using too high a draft for coarse counts, but for finer counts their drafts are probably not high enough.

► For coarse counts (10s and 20s) yarn strength decreased as draft increased. But a draft as high as 15 can be used for 20s yarn without much loss in yarn strength; and you can safely go to drafts as high as 20 for 30s yarns and 25 for 40s.

A PREVIOUS study (1)[3] dealt with the determination of the allocation of drafts between the various drafting processes from picking through spinning which would result in optimum yarn quality when processing medium staple cotton. At that time it was stated that the complete study on draft allocation would involve short, medium, and long staple cottons, with at least two cottons in each length group from different growth areas.

The present report deals with the determination of draft allocation when processing short staple cotton, involving two varieties of 15/16" staple cotton from different growth areas. The plan of work, testing and selection procedure used was the same as that described in (1).

MATERIALS AND METHODS

Fiber Properties of Selected Cottons. The fiber properties of the two short staple cottons selected for this study are listed in *Table 1.*

The drafting systems investigated, the roll settings, spindle speeds, etc., and test methods employed were described in (1). The yarns were spun from both cottons with a twist multiplier of 4.45.

Continued on page 104

[1]One of the laboratories of the Southern Utilization Research and Development Division, U. S. Department of Agriculture, Agricultural Research Service. It is at New Orleans, La.

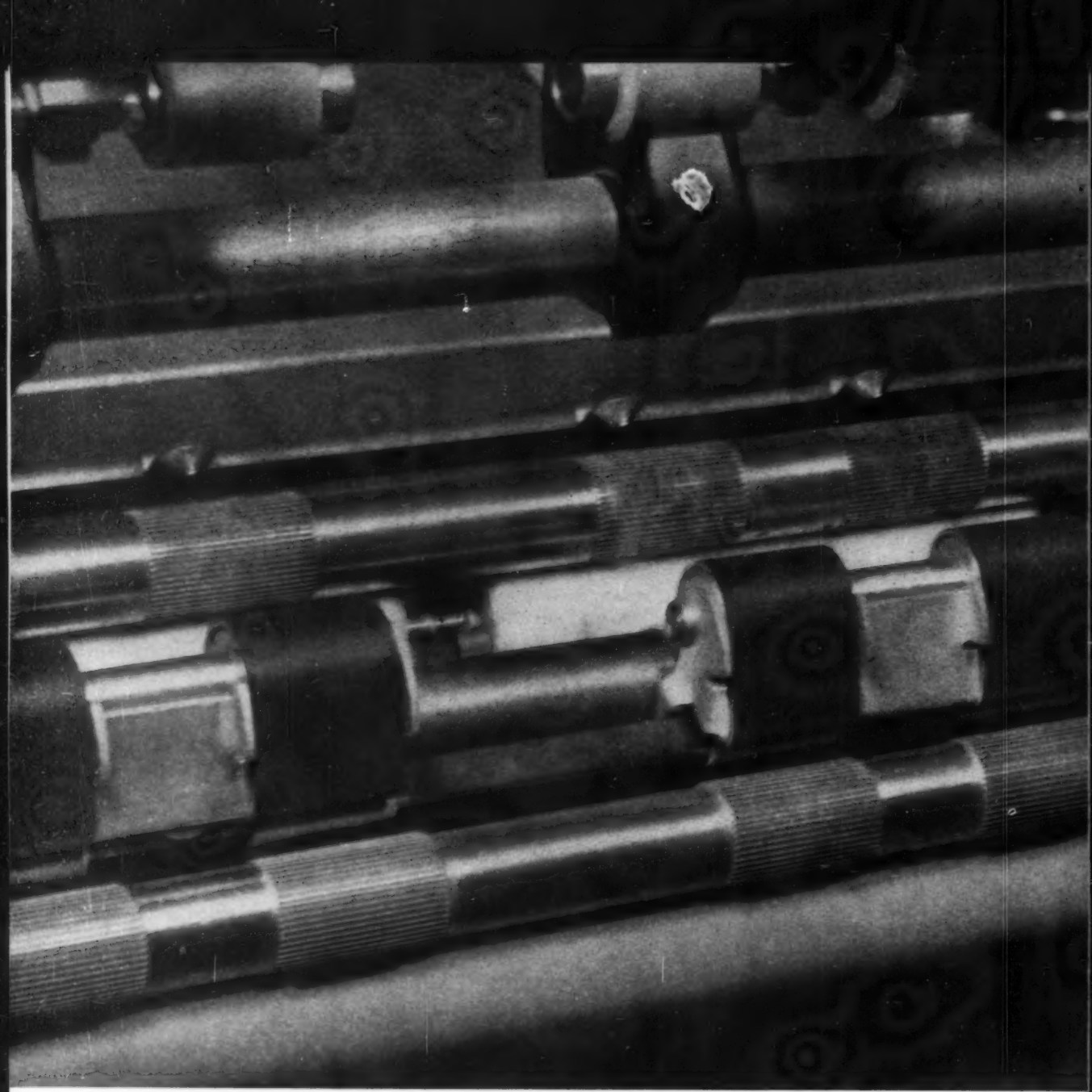
[2]Part 1, dealing with medium staple cottons, appeared in TEXTILE INDUSTRIES for May, 1960, pages 209-210, 213, 217, 219, 223, 225, and 227. Part 3, covering long staple cottons, will appear in an early issue.

[3]Numbers in parentheses are references at the end of this article.

TABLE 1. Fiber Properties of the Selected Cottons

Cotton Variety Sample	Classer's Evaluation Length In.	Grade	Fiber Length and Distribution Fibrograph UHM In.	Mean In.	Uniformity Ratio %	Micronaire[1] Unit	Strength[2] Index	Maturity[3] %
Unknown No. 1	15/16	M	.96	.80	83	4.80	7.24	78
Unknown No. 2	15/16	M	.97	.76	79	4.74	8.27	91

[1]Curvilinear Scale [2]Pressley method "zero gauge" [3]Random maturity NaOH method



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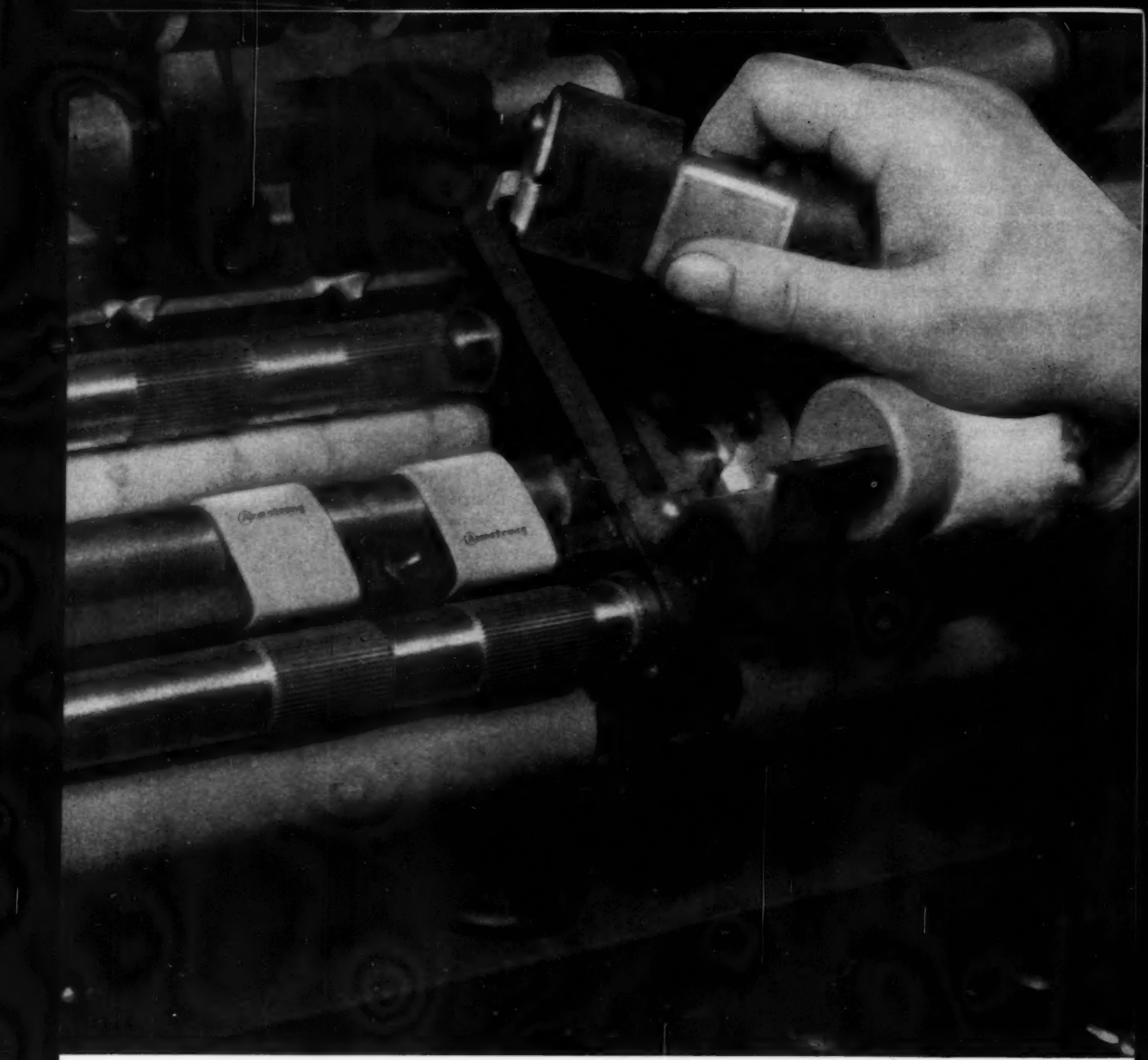

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RESULTS AND DISCUSSION *(Continued from page 101)*

The results showing the effect of the weight of picker lap on the uniformity of 45, 55, and 65 grain/yard (3.2, 3.9, and 4.6 kilotex) card slivers are listed in *Table 2*.

An analysis of variance test[4] between the 11, 13, 15, and 17 ounces/yard (341, 403, 465, and 527 kilotex) laps for both the unknown No. 1 and No. 2 cottons showed no significant difference between them in regards to their effect on the uniformity of card sliver. The variance ratio tests[4] indicated that the trend was toward the 13 and 15 ounces/yard picker lap producing the most uniform card sliver for both the unknown No. 1 and No. 2 cottons. That is, in all cases where a significant difference existed, the sliver from the 13 or 15 ounces/yard picker lap was more uniform than that from the 11 or 17 ounces/yard picker lap.

The results showing the effect of the weight of card sliver on the uniformity of first drawing can be seen in *Table 3*.

The analysis of variance test between the 45, 55, and 65 grains/yard card sliver of the unknown No. 1 cotton revealed a trend in favor of the 45 grains/yard card sliver producing the most uniform first drawing sliver of all weights. However, no definite trend was discernible for the unknown No. 2 cotton.

The variance ratio tests for the unknown No. 1 cotton revealed that for the first replicate the 45 grains/yard first drawing sliver from the 45 and 55 grains/yard card sliver was significantly more uniform than that from the 65 grains/yard card sliver. The 55 and 65 grains/yard first drawing slivers from the 45 grains/yard card sliver was significantly more uniform than those from the 55 and 65 grains/yard card slivers.

[4]A detailed description of these tests appeared in the previous report on medium staple cottons (1).

TABLE 2. Effect of Picker Lap Weight on Card Sliver Uniformity—Saco-Lowell Sliver Tester[1] Per Cent CV

Unknown No. 1				Unknown No. 2			
Picker Lap	Card Sliver, Grn/Yd			Picker Lap	Card Sliver, Grn/Yd		
Oz/Yd	45 (3.2)[2]	55 (3.9)	65 (4.6)	Oz/Yd	45 (3.2)	55 (3.9)	65 (4.6)
	First Replicate				**First Replicate**		
11 (341)	2.82	2.48	2.49	11 (341)	2.92	2.50	2.23
13 (403)	2.48	2.26	2.15	13 (403)	3.04	2.16	2.29
15 (465)	2.67	2.40	1.76	15 (465)	2.81	2.46	2.07
17 (527)	2.82	2.58	2.41	17 (527)	3.04	2.57	2.13
	Second Replicate				**Second Replicate**		
11 (341)	2.78	2.43	1.75	11 (341)	2.99	2.55	2.53
13 (403)	2.74	2.45	1.80	13 (403)	2.80	2.61	2.21
15 (465)	2.74	2.20	2.05	15 (465)	2.72	2.47	2.36
17 (527)	2.96	2.54	2.18	17 (527)	3.15	2.41	2.30

[1]Use of a company and/or product name by the Department does not imply approval or recommendation of the product to the exclusion of others which may also be suitable.
[2]All figures in parentheses are kilotex.

TABLE 3. Effect of Card Sliver Weight on First Drawing Sliver Uniformity—Saco-Lowell Sliver Tester Per Cent CV

Unknown No. 1				Unknown No. 2			
Card Sliver	First Drawing Sliver, Grn/Yd			Card Sliver	First Drawing Sliver, Grn/Yd		
Grn/Yd	45 (3.2)[1]	55 (3.9)	65 (4.6)	Grn/Yd	45 (3.2)	55 (3.9)	65 (4.6)
	First Replicate				**First Replicate**		
45 (3.2)	4.54	3.77	3.24	45 (3.2)	4.95	3.94	3.49
55 (3.9)	4.77	4.17	3.69	55 (3.9)	4.85	4.06	3.95
65 (4.6)	8.39	4.38	3.91	65 (4.6)	4.57	3.99	3.76
	Second Replicate				**Second Replicate**		
45 (3.2)	4.80	3.97	3.37	45 (3.2)	4.68	3.80	3.61
55 (3.9)	4.62	4.11	3.50	55 (3.9)	4.76	4.46	3.61
65 (4.6)	7.94	4.14	3.95	65 (4.6)	4.45	4.18	3.71

[1]All figures in parentheses are kilotex.

The variance ratio test for replicate 2 of this cotton showed that the 45, 55, and 65 grains/yard first drawing slivers from either the 45 or 55 grains/yard card sliver were more uniform than those from the 65 grains/yard card sliver. Thus both the analysis of variance and the variance ratio tests indicate that for the unknown No. 1 cotton, the 45 grains/yard card sliver produces the most uniform first drawing sliver for all three weights.

The variance ratio test for the first replicate of the unknown No. 2 cotton revealed that the 45 grains/yard first drawing sliver from the 65 grains/yard card sliver was significantly more uniform than that from the 45 grains/yard card sliver. The 65 grains/yard first drawing sliver from the 45 grains/yard card sliver was significantly more uniform than that from the 55 and 65 grains/yard card slivers. For the second replicate the 55 grains/yard first drawing sliver from the 45 grains/yard card was significantly more uniform than that from the 55 and 65 grains/yard card slivers. Therefore, the over-all indication from the variance ratio tests for this cotton is that the 65 grains/yard card sliver produces the most uniform 45 grains/yard first drawing while the 45 grains/yard card sliver produces the most uniform 55 and 65 grains/yard first drawing.

The effect of the weight of first

TABLE 4. Effect of First Drawing Sliver Weight on Second Drawing Sliver Uniformity—Saco-Lowell Sliver Tester Per Cent CV

Unknown No. 1				Unknown No. 2			
First Drawing Sliver	Second Drawing Sliver, Grn/Yd			First Drawing Sliver	Second Drawing Sliver, Grn/Yd		
Grn/Yd	45 (3.2)[1]	55 (3.9)	65 (4.6)	Grn/Yd	45 (3.2)	55 (3.9)	65 (4.6)
	First Replicate				First Replicate		
45 (3.2)	4.82	4.39	4.02	45 (3.2)	5.51	4.85	4.50
55 (3.9)	4.55	4.24	3.93	55 (3.9)	5.09	4.59	4.10
65 (4.60)	5.20	4.80	4.00	65 (4.6)	5.01	4.65	3.95
	Second Replicate				Second Replicate		
45 (3.2)	4.68	4.88	3.88	45 (3.2)	5.43	4.69	4.18
55 (3.9)	4.54	4.06	3.92	55 (3.9)	4.73	4.77	4.12
65 (4.6)	4.68	4.41	4.68	65 (4.6)	5.09	4.59	4.12

[1]All figures in parentheses are kilotex.

TABLE 5. Effect of Second Drawing Sliver Weight on Roving Uniformity—Uster Per Cent CV

Unknown No. 1				Unknown No. 2			
Hank	Second Drawing Sliver, Grn/Yd			Hank	Second Drawing Sliver, Grn/Yd		
Roving	45 (3.2)[1]	55 (3.9)	65 (4.6)	Roving	45 (3.2)	55 (3.9)	65 (4.6)
	First Replicate				First Replicate		
0.50 (1181.1)	7.3	7.6	7.6	0.50 (1181.1)	6.5	6.5	6.8
1.0 (590.5)	6.9	7.2	7.3	1.0 (590.5)	7.0	7.2	7.4
1.50 (393.1)	7.3	7.4	7.8	1.5 (393.7)	7.9	7.8	7.9
2.0 (295.3)	7.7	7.9	7.5	2.0 (295.3)	7.5	7.6	8.3
3.0 (196.8)	7.9	8.3	8.3	3.0 (196.8)	8.3	7.6	8.2
4.0 (147.6)	8.8	8.5	9.0	4.0 (147.6)	8.7	8.8	8.7
5.0 (118.1)	9.1	8.7	9.4	5.0 (118.1)	8.5	8.9	8.9
6.0 (98.4)	9.7	9.2	9.9	6.0 (98.4)	9.1	8.8	8.8
	Second Replicate				Second Replicate		
0.50 (1181.1)	7.5	8.0	7.4	0.50 (1181.1)	6.9	7.0	6.9
1.0 (590.5)	7.1	7.2	7.6	1.0 (590.5)	7.6	7.8	7.0
1.5 (393.7)	7.3	7.5	7.9	1.5 (393.7)	7.3	7.6	7.6
2.0 (295.3)	7.5	7.6	7.8	2.0 (295.3)	8.0	7.9	8.0
3.0 (196.8)	7.7	8.3	8.6	3.0 (196.8)	8.5	8.6	8.6
4.0 (147.6)	8.5	8.5	8.6	4.0 (147.6)	8.4	8.7	8.7
5.0 (118.1)	8.8	8.6	9.0	5.0 (118.1)	9.6	9.9	10.5
6.0 (98.4)	8.8	8.9	9.0	6.0 (98.4)	9.0	9.3	9.2

[1]All figures in parentheses are tex.

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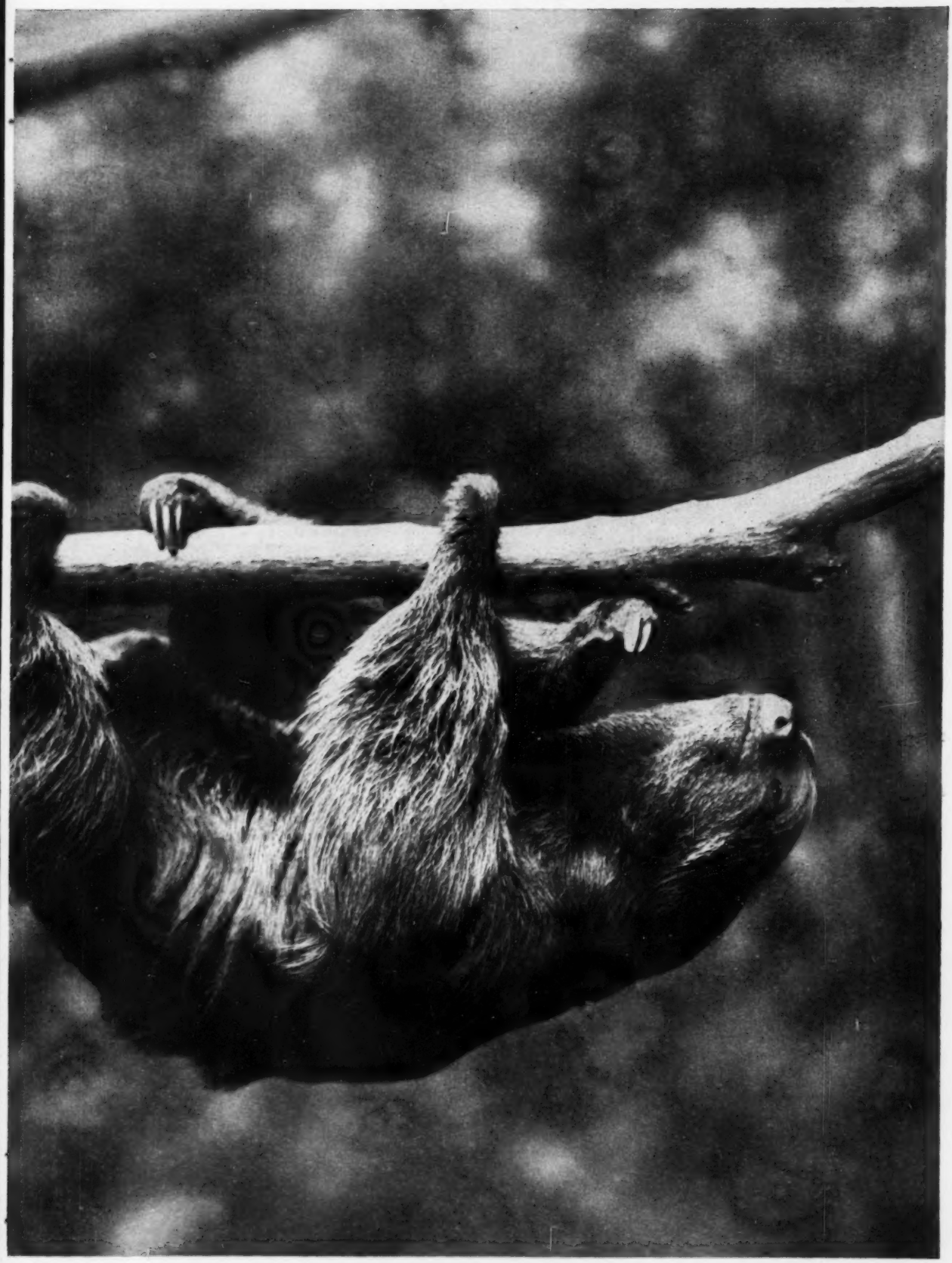

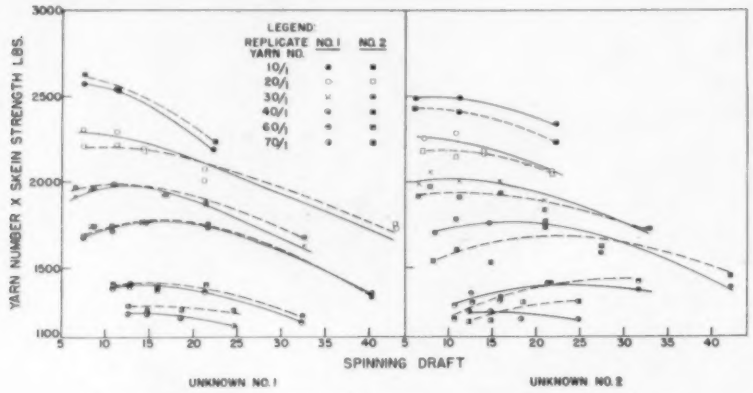

Figure 1. Effect of spinning draft on yarn skein count-strength product.

Figure 1 shows the effect of spinning draft upon the skein count-strength product of yarns from the two cottons. For the coarse yarns, 10/1 and 20/1 (59 and 30 tex), there is a decrease in strength with an increase in draft; while for the medium yarns, 30/1 and 40/1 (20 and 15 tex), there is an increase, a maximum, and then a decrease in strength as the draft is increased. These curves are similar to the ones for the medium staple cotton (1). Due to excessive end breakage the fine yarns could not be spun at high drafts.

The optimum drafts for the two replicates as well as for the two cottons were practically the same. The optimum drafts were approximately 7, 7, 12, 18, and 20, respectively, for the 10/1, 20/1, 30/1, 40/1, and 60/1 yarns. The 70/1 yarn could not be spun at any draft. Thus, the optimum draft increases with a decrease in yarn number. This is the most pronounced draft allocation finding for the pre-spinning processes.

drawing sliver on the uniformity of second drawing sliver is shown in *Table 4*.

The analysis of variance test for the unknown No. 1 cotton revealed no relation between weight of first drawing and the uniformity of second drawing sliver. The variance ratio tests indicated that the 55 grains/yard first drawing produced the most uniform second drawing sliver of all weights.

The analysis of variance test for the unknown No. 2 cotton revealed a trend toward the 55 or 65 grains/yard first drawing producing the most uniform second drawing. This was also substantiated by the variance ratio tests. Combining the results of the analysis of variance and variance ratio tests, the indications are that the 55 grains/yard first drawing sliver produces the most uniform second drawing sliver of all weights for both the unknown No. 1 and unknown No. 2 cottons.

The effect of weight of second drawing on the uniformity of roving is seen in *Table 5*.

The analysis of variance tests showed a significant trend toward the light weight second drawing sliver producing the most uniform 0.50- through 6.00-hank rovings of the unknown No. 1 cotton. For the unknown No. 2 cotton the above trend was not significant at the 95% probability level. However, from observation of *Table 5*, it can be seen that such a trend is evident. It was also true with the medium (1) and long (2) staple cottons that the light weight second drawing produced the most uniform roving. This appears to be

TABLE 6. Effect of Hank Roving (Spinning Draft) on Yarn Uniformity

Yarn No.	Hank Roving	Per Cent Coefficient of Variation (Uster) Unknown No. 1 Rep. 1	Unknown No. 1 Rep. 2	Unknown No. 2 Rep. 1	Unknown No. 2 Rep. 2
10/1 (59)[1]	0.5 (1181)	14.6	15.0	14.3	14.4
	1.0 (590)	13.8	13.5	13.2	13.5
	1.5 (394)	13.5	13.2	13.1	13.0
20/1 (30)	0.5 (1181)	16.7	16.4	[2]	[2]
	1.0 (590)	15.5	14.1	14.6	14.4
	1.5 (394)	13.6	13.8	14.0	14.1
	2.0 (295)	13.7	14.3	13.3	14.0
	3.0 (197)	13.9	13.6	12.9	13.2
30/1 (20)	1.0 (590)	17.2	17.6	15.6	16.2
	1.5 (394)	16.0	16.2	15.4	15.4
	2.0 (295)	15.9	15.8	14.9	15.3
	3.0 (197)	15.7	16.0	15.3	15.4
	4.0 (148)	15.8	15.6	14.9	14.8
	5.0 (118)	15.3	15.5	15.0	14.9
40/1 (15)	1.0 (590)	18.2	18.1	17.5	17.6
	1.5 (394)		17.0	16.2	15.7
	2.0 (295)	15.9	16.3	16.5	15.5
	3.0 (197)	15.8	17.1	16.6	15.6
	4.0 (148)	16.0	16.0	15.9	15.8
	5.0 (118)	15.8	16.3	15.6	16.2
	6.0 (98)	16.2	16.6		
60/1 (10)	2.0 (295)	20.2	19.3	18.4	17.9
	3.0 (197)	18.9	19.1	19.0	17.9
	4.0 (148)	18.9	19.5	18.5	18.1
	5.0 (118)	18.8	18.5	18.6	17.9
	6.0 (98)	18.9	19.3	18.7	17.7
70/1 (8)	3.0 (197)	18.6	18.1	17.5	18.2
	4.0 (148)	17.8	17.3	18.8	17.5
	5.0 (118)	17.8	17.6	18.7	18.2
	6.0 (98)	17.2	16.7	18.4	16.9

[1]All figures in parentheses are tex.
[2]Unspinnable because of excessive end breakage.

30/1, 40/1, and 60/1 (10 tex) yarns. The drafts for these yarns were approximately the same as those found for the medium staple cottons (1).

A difference noted between the short and medium staple cottons reported in (1) is that the yarn count-strength product vs spinning draft curve for the 70/1 (8 tex) yarn of the short staple cotton does not have the typical increase in strength and then decrease as the draft is increased. This is probably because the spinning limits of the yarn number for these cottons have either been approached or exceeded.

The coefficients of variation (Uster) of the yarns spun from the various rovings are presented in *Table 6*. The data for the coarse yarns show that as the draft is increased the variation increases. The plot of spinning draft against coefficient of variation for the medium and fine yarns did not result in curves as smooth as similar plots for the skein count-strength products shown in *Figure 1*. For this reason, and the fact that the results might be of value to other researchers in the field, they are presented in tabular form.

COMPARISON OF DRAFT ALLOCATIONS

To test the over-all effectiveness of the draft allocations developed, the following experiments were performed with the unknown No. 1 cotton. 10/1 yarns were spun as follows:

Optimum Allocation
1.50 hank roving
45 grains/yard second drawing
55 grains/yard first drawing
45 grains/yard card sliver
13 ounces/yard picker lap

Medium Allocation
1.50 hank roving
55 grains/yard second drawing
65 grains/yard first drawing
65 grains/yard card sliver
17 ounces/yard picker lap

Worst Allocation
0.50 hank roving
55 grains/yard second drawing
65 grains/yard first drawing
65 grains/yard card sliver
17 ounces/yard picker lap

20/1 yarns were spun from the unknown No. 1 cotton as shown in the data which follows:

Typical Mill Allocation
1.00 hank roving
55 grains/yard second drawing
55 grains/yard first drawing
55 grains/yard card sliver
15 ounces/yard picker lap

Optimum Allocation
3.00 hank roving
45 grains/yard second drawing
55 grains/yard first drawing
45 grains/yard card sliver
13 ounces/yard picker lap

40/1 yarns were spun as follows:

Optimum Allocation
3.00 hank roving
45 grains/yard second drawing
55 grains/yard first drawing
45 grains/yard card sliver
13 ounces/yard picker lap

Medium Allocation
6.00 hank roving
45 grains/yard second drawing
55 grains/yard first drawing
45 grains/yard card sliver
13 ounces/yard picker lap

Worst Allocation
1.00 hank roving
65 grains/yard second drawing
65 grains/yard first drawing
65 grains/yard card sliver
17 ounces/yard picker lap

The per cent elongations at break, per cent coefficient of variation (Uster), and the skein and single strand count-strength products of these yarns are listed in *Table 7*. Due to excessive end breakage, the 40/1 yarn could not be spun with a draft of 40 and the worst draft allocations prior to spinning. However, it is noticed from *Figure 1* that it could be spun with a 40 draft when the optimum draft allocations through roving were used. This shows the importance of draft allocation prior to spinning.

The skein count-strength products for the 10/1 yarns from the optimum and medium allocations are approximately equal, while both are significantly stronger than the yarns using the worst draft allocations. The medium draft allocation consisted of the optimum spinning draft and the worst allocations prior to spinning. The worst allocations, as implied, consisted of the worst allocations at each process. The fact that yarns from the optimum and medium allocations were approximately equal in strength and both were superior to the yarns from the worst allocations emphasizes the importance of spinning draft and de-emphasizes the importance of draft allocation prior to spinning for short staple cottons.

The data for the 20/1 yarns from the optimum allocations and a typical mill allocation show the optimum allocations to yield su-

Continued on page 115

TABLE 7. A Comparison of Yarn Properties Spun with Different Draft Allocations

Draft Organization	Yarn Number x Skein Strength (lb)			Yarn Number x Single Strand Strength (gm)			Per Cent Elongation at Break			Per Cent Coefficient of Variation (Uster)		
	Yarn Number			Yarn Number			Yarn Number			Yarn Number		
	10/1 (59)[1]	20/1 (30)	40/1 (15)	10/1 (59)	20/1 (30)	40/1 (15)	10/1 (59)	20/1 (30)	40/1 (15)	10/1 (59)	20/1 (30)	40/1 (15)
Optimum	2646	2358	1797	9298.4	8859.9	7203.6	9.60	8.25	6.80	12.8	13.9	15.9
Medium	2650		1786	9205.3		7292.0	9.35		6.95	13.1		16.4
Worst	2311		[2]	8364			8.60			14.8		
Mill		2004			7594			7.25			15.6	

[1]All figures in parentheses are tex.
[2]Could not be spun.

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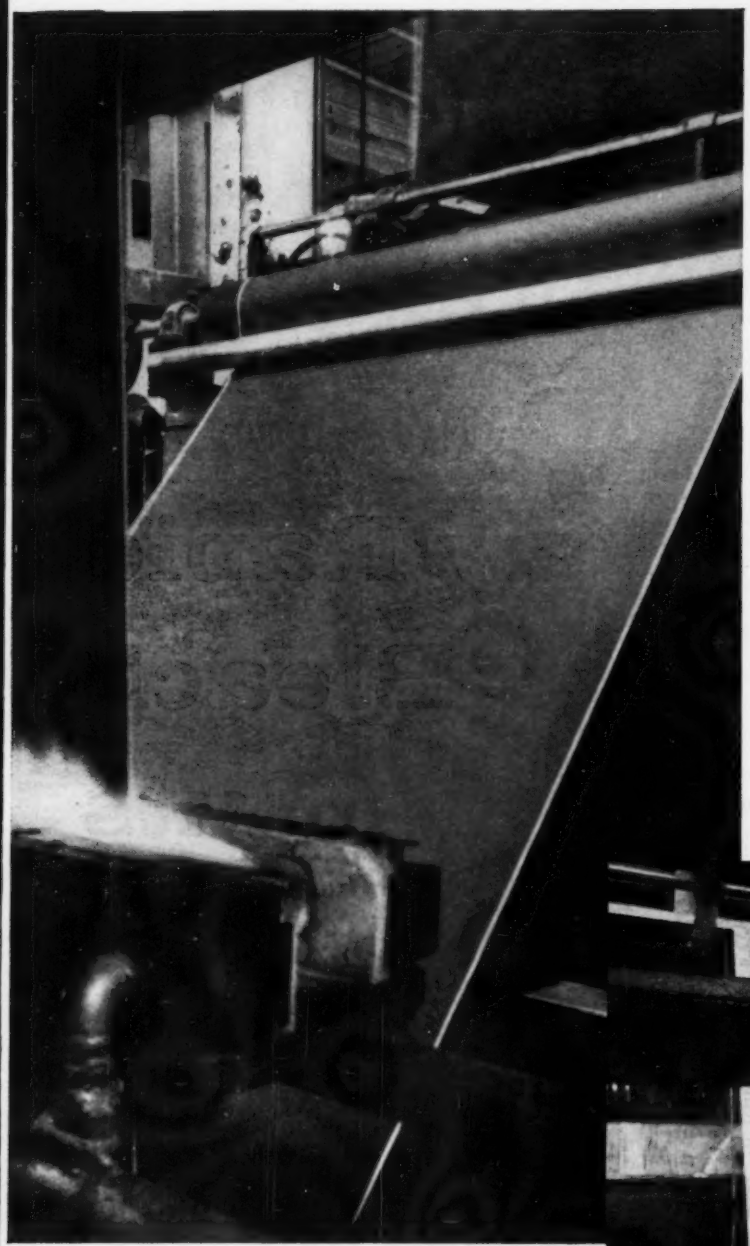

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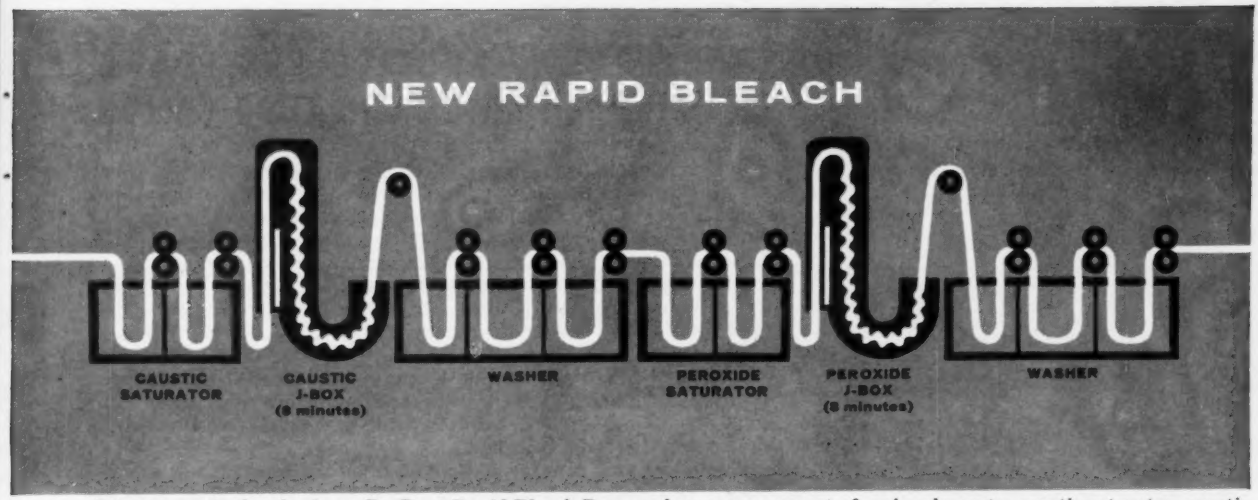

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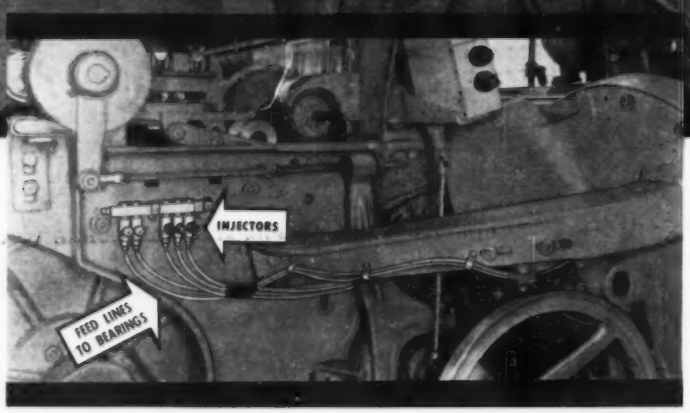

Injectors receive lubricant from central source through sealed lines and feed all bearings while looms are operating.

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perior yarns from every standpoint. This difference is no doubt due largely to the high spinning draft used in the mill organization. However, it is known that some mills are using a 1.75-hank roving when spinning 20/1 yarn from 15/16" cotton. This would bring the properties of the yarn closer to those of the yarns using the laboratory allocations.

The only difference between the 40/1 yarns using the optimum and medium allocations was the spinning draft. The optimum allocations included a 3.0-hank roving (approx. a 13.3 spinning draft), while the medium included a 6.0-hank roving (approx. a 6.7 spinning draft). The skein count-strength product and coefficient of variation (Uster) of the 40/1 yarns from the optimum allocations is slightly better than that from the medium allocations, while the reverse is true for the single strand strength and per cent elongation at break. As a whole there appears to be very little choice between the two.

SUMMARY AND CONCLUSIONS

The results of the experiment indicate that it is difficult to establish a definite draft allocation pattern for the processes prior to spinning for short staple cottons. However, with one exception it was indicated that a light card sliver (45 grains/yard), a medium weight first drawing sliver (55 grains/yard), and a light weight second drawing sliver produced the most uniform rovings for both cottons. As was true with the medium staple cotton, the most significant trend observed for the processes prior to spinning was that a light weight second drawing sliver produced the most uniform 0.50- through 6.00-hank rovings.

It was found that the optimum spinning drafts for the coarse and medium yarns of the two cottons were practically the same and also were about the same as those of the medium staple cotton (1).

It was found that spinning draft had more effect upon yarn properties than the draft at the other processes. However, a 40/1 yarn could be spun with a spinning draft of 40 when using the optimum allocation prior to spinning, and it could not be spun at this draft when the worst allocations prior to spinning were employed. These findings indicate that for short staple cottons, and the yarn tests employed, that if optimum spinning conditions are used, draft allocations prior to spinning are relatively unimportant; however, if high spinning drafts are used the draft allocations prior to spinning become increasingly more important.

To summarize these results for practical application the following should be noted:

For short staple cottons, using the double apron long draft spinning system, more care should be used in selecting spinning draft than drafts at the processes prior to spinning. The findings indicate that many mills are employing too high a draft for their coarse yarns while for the finer yarns their drafts are probably not high enough.

It was observed that for the coarse yarns (10/1, 20/1) there was a decrease in yarn strength with an increase in draft. However, a draft as high as 15 can be employed for the 20/1 yarn without an appreciable loss in yarn strength. On the other hand, drafts as high as 20 and 25 can safely be employed for the 30/1 and 40/1 yarns, respectively.

Acknowledgments

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2. Simpson, J., Callegan, A. T., and Sens, C. L., Choosing the Best Draft, Part 3—Long Staple Cottons. To be published in TEXTILE INDUSTRIES.

Coated fabrics may solve space flight problems

■ MAN'S FIRST inhabited space station may be packed in a small container as it leaves the earth, blown into shape like a balloon when it reaches orbit, and "rigidized" by quick-setting plastic foam (see photo on page 92).

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Researchers from both Goodyear Aircraft and the parent Goodyear

Continued on page 131

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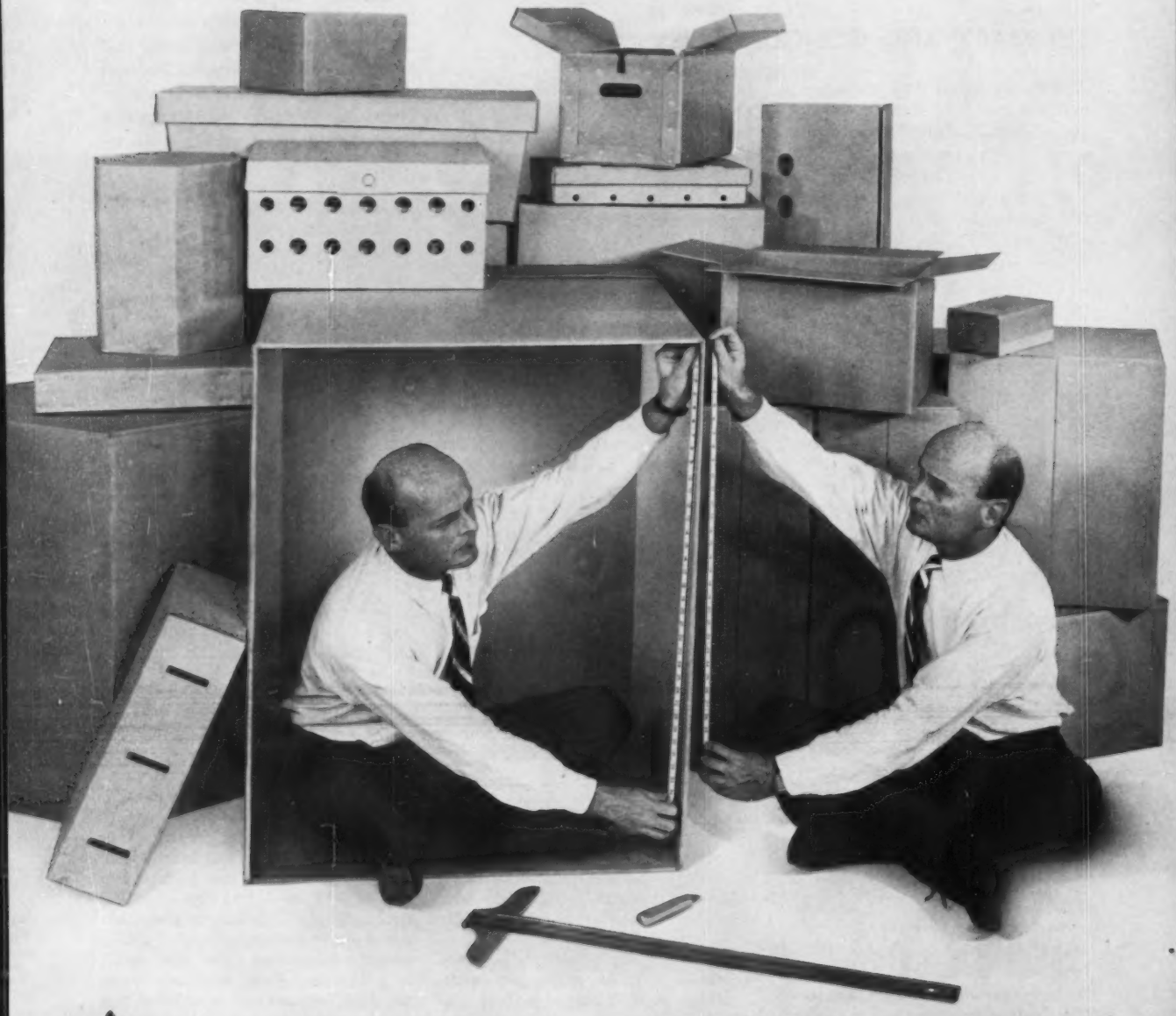

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It is a significant economic factor that the weaving mill or knitting mill buys its raw materials by the pound but sells its production by the yard. Thus, to get the most advantageous weight-to-length ratio, the maximum tension consistent with adequate-quality production must be maintained at every single step of the spinning and weaving or knitting processes.

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To this should be added the fact that stretching causes an alignment of the substructure of fibers and filaments. Self-aligning yarns such as modern synthetics of the nylon and Dacron types actually are increased in ultimate tensile strength by the use of stretch-spinning, while their index of dye absorption is simultaneously changed.

Thus, from the original production of the yarn to its final weaving or knitting, and finishing, the maintenance of the maximum safe tensions remains of lasting significance.

What Tension? What are the right tensions for different yarns? To arrive at a significant figure here, an investigation has been made of many existing yarns. Safe tensions for a yarn fall essentially within the part of the load-stretch curve where the crimp has been taken out of the yarn, but before it starts to yield. In terms of textile physics, this region of the curve is called "the region of proportionate elongation." Within this part, but not beyond the limit of proportionality, Hooke's Law is essentially valid—an equal stress produces a proportionate strain, and vice versa.

For earlier investigations and a more detailed analysis of the principles involved in tension and length testing of filamentous materials in general, reference is made to the literature (1, 2).*

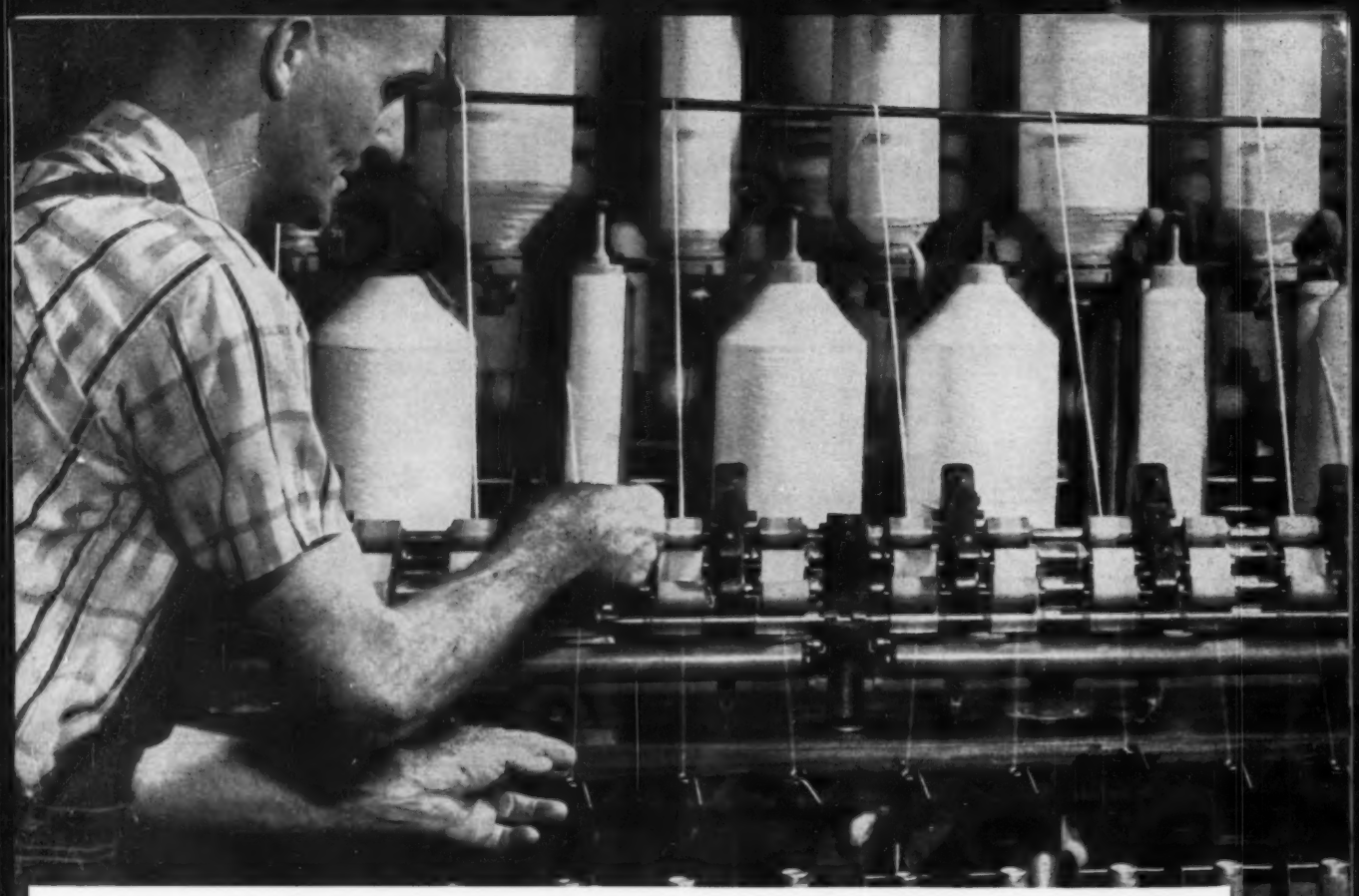
From a practical viewpoint then, how do we arrive at a safe tension for yarns? This basic analysis requires the understanding of the *load-extension characteristic* of each type of yarn. One way to determine this load-elongation curve is a load-vs-length tester. Several single strand instruments with or without automatic recording are in existence.

In the absence of a special apparatus to check the length of a yarn with respect to the varying tensions with which it is stretched, a simple method can be easily improvised. *Figure 1* shows one method used to determine tension in conjunction with a change of yarn length.

FIGURE 1. Tension-vs.-stretch characteristics may be determined with a tension meter and a yardstick, as above.

Yarn fastened to a rigid support such as a nail is pulled manually over a tape measure or a yardstick. Pressure sensitive tape stuck to the yarn at a certain length, say 20 inches, indicates by its travel the gradual increase in length of the

*Figures in parentheses are literature references at the end of this article.



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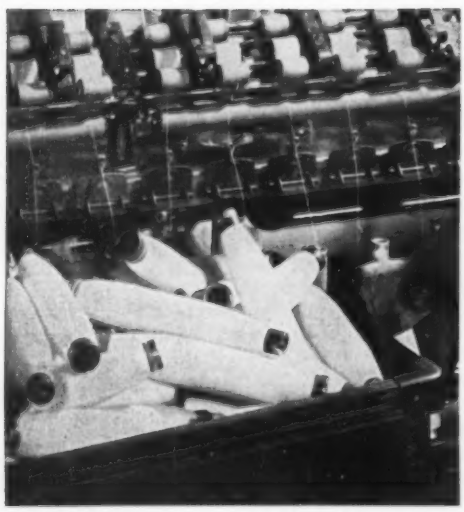
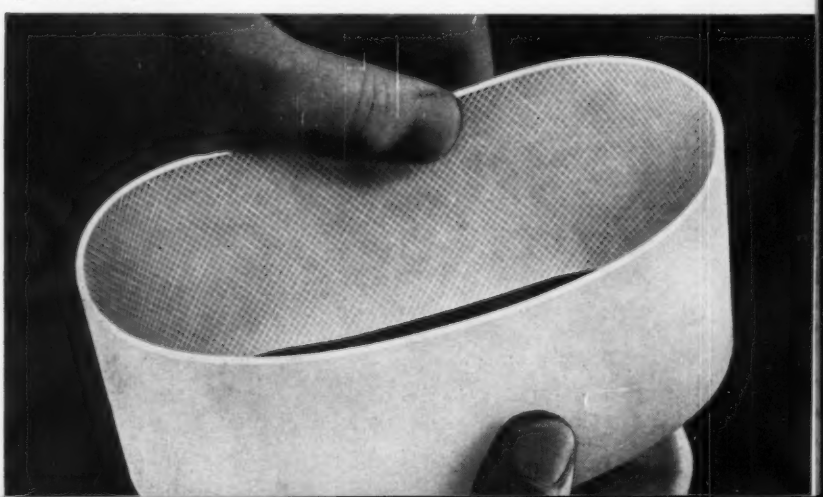
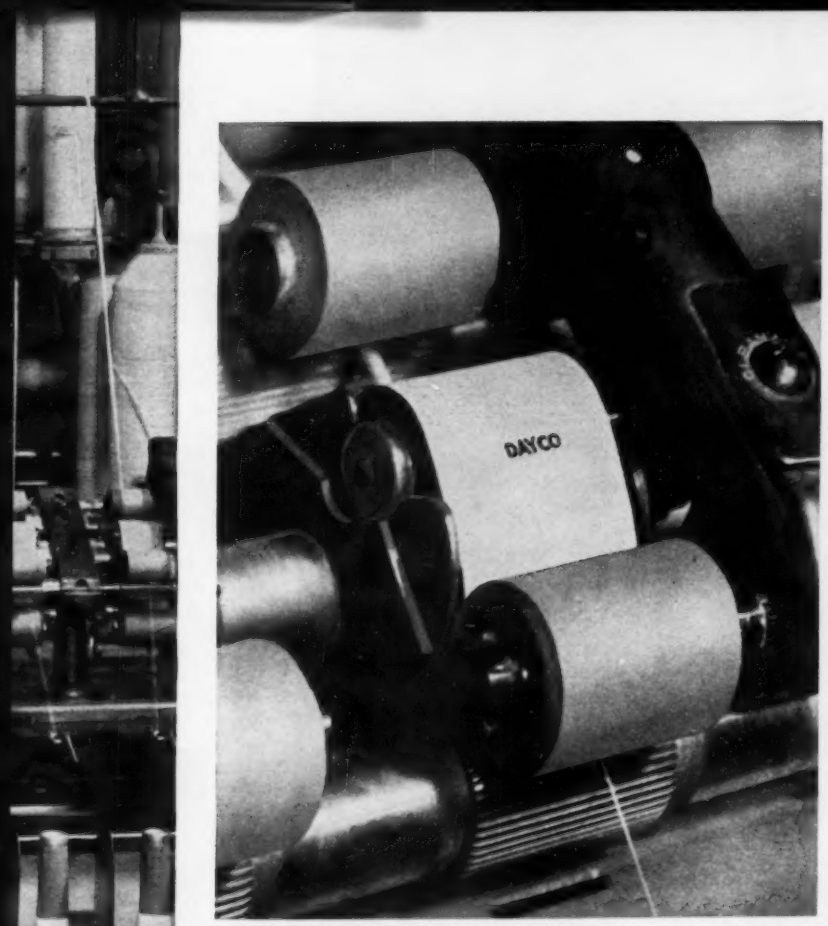
GET 12% BETTER YARN . .



"UPS OUTPUT of strong uniform finer quality yarn" reports the overseer after a day with Dayco Aprons and Cots. Dayco's got just the right surface friction to leave the larger fibers in the yarn, not on the clearer board. You can count on Dayco Aprons and Cots when you want to count important extra yardage . . . better yarn . . . more full bobbins . . . at the end of the shift.

DAYCO'S EXCLUSIVE EMBOSSED DESIGN keeps the shaft clean, cuts your apron drag 50%, prevents tucking and eliminates waste-collecting. No sign of apron chatter, either.





DAYCO COTS STAY GOOD AS NEW year after year from buffing to buffing . . . keep all their fine-quality drafting characteristics. Dayco's long-run, top performance makes them the choice in leading mills.

. . TROUBLE-FREE PERFORMANCE

with Dayco Aprons and Cots, the pair for profits

More yarn . . . better quality yarn . . . more consistency. These are the benefits that explain why Dayco Aprons and Cots are the choice of superintendents and overseers in leading mills everywhere. They are precision-made to exacting tolerances for modern super-drafting, and high yarn uniformity; precision-formulated for longer, trouble-free life. They outlast all others in oxygen-intensified checking tests. Dayco has proven thousands of times in the laboratory and in the mill there is no match for Dayco Aprons and Cots. Throughout their lifetime, they start better . . . stay better longer.

Ask your Dayco Representative to set up a trial installation. Phone or write Dayco Textile Products Co. (Formerly Dayton Rubber Co., Textile Division) 401 S. C. National Bank Bldg., Greenville, S. C.

Dayco TEXTILE PRODUCTS CO.

Divison of Dayco Corporation

OVERSEAS PLANT: THE DAYTON RUBBER CO. LTD., DUNDEE, SCOTLAND

Report of APRON CHECKING COMPARISON TEST MADE IN OZONE CHAMBER

DAYTON RUBBER researchers found Dayco Aprons superior in a comparison test. All apron brands were exposed in an intensified oxygen chamber developing O_3 (ozone).

This test, simulating actual plant conditions in the O_3 chamber converted months to minutes and showed even the leading brands developing the spiderweb checking many "months" sooner than Dayton.

MECHANICAL VS. CHEMICAL— A NEW VIEW ON CHECKING

Air conditions in textile plants have changed greatly in recent years. We find greater turbulence of air over the cleaners, a marked increase in number of motors, plus motors of larger size, air conditioning and many other air factors. Yet Dayton laboratory research and field investigation find the checking problem should be studied in terms of mechanical, rather than chemical wear-and-tear. The new sharper angle of the apron and the machines with the new nose bars, the greater demands on machines all suggest research into synthetic compounds instead of the air conditions in the plants. Research into "rat tailing," frictional heat build-up—powerful enough to strip gears—and apron chatter promise sounder answers to apron problems than the negligible amounts of ozone found in the air.

DAYTON ATTACKS BOTH CHECKING CAUSES

Dayton researchers have as a result of this problem reformulated compounds not only to meet *chemical* conditions but also to cope with the newer *mechanical* conditions. Dayton researchers developed formulations for *lower* coefficients of frictions around the new narrow-nose tensors, yet more exacting coefficients on the apron surface for smoother more uniform yarn.

"AC" catalysts help you achieve finer results at lower cost—through longer resin bath life, faster more complete curing of thermosetting resins, with minimum resin add-on. And Monsanto AC Catalysts are compatible with practically all finishing agents. Write for complete technical data, and expert finishing counsel, to Monsanto Chemical Company, Plastics Division, Room 746, Springfield 2, Mass.

MONSANTO DEVELOPER IN **PLASTICS**

Monsanto

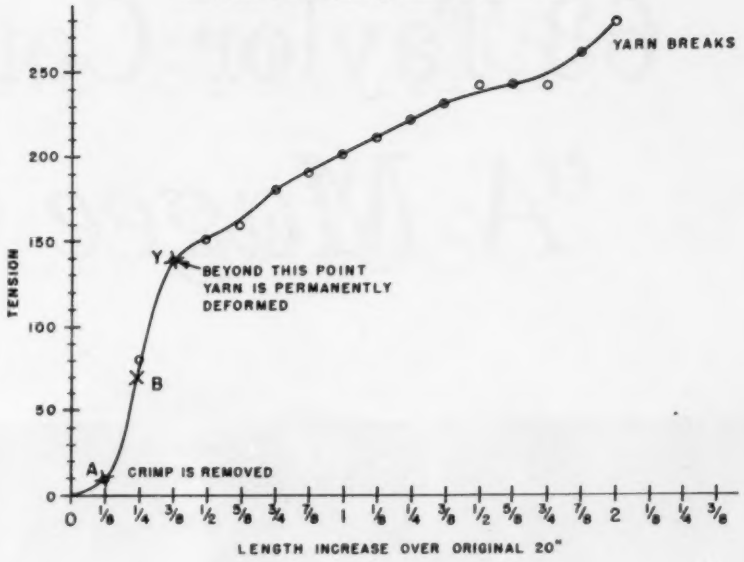
Other Monsanto textile chemicals: Resloom® E-63 chlorine resistant resin; Resloom E-50 cyclic urea resin; Resloom HP and M-75 melamine resins; Stymer® sizes; Lytron® polystyrene latices®

TABLE 1

Length Increase of a 20-Inch Length of Yarn at Various Tensions

Grams tension	Inches length increase
0	0
25	1/8
80	1/4
140	3/8
150	1/2
160	5/8
180	3/4
190	7/8
200	1
210	1 1/8
220	1 1/4
230	1 3/8
240	1 1/2
250	1 3/4
260	1 7/8
280	yarn breaks

FIGURE 2. Curve showing tension versus stretch



yarn. For each progressive length the tension is recorded as read on a tension meter that remains inserted in the yarn during the entire stretch process.

From a practical viewpoint, this simple method requires only a portable tension meter and a measuring tape or yardstick.

Actual measurements made by this method of stretching and measuring a viscose-type yarn are presented in *Table 1*.

Having the load-vs.-tension figures, we can now plot the data obtained in a load-extension curve such as shown in *Figure 2*. It will be seen that there is a first region from the origin (0) to the foot of the curve (A). This is the part within which the crimp is taken out of the yarn and where no manufacturing operation should take place.

The yield point called (Y) shown on the upper part of the load-extension curve, is the limiting tension beyond which even an occasional shock tension should never go in yarn processing. Between point (A) and the yield point (Y) we have a comparatively linear region. Safe tensions by definition are those which, even under a fluctuating load, never go beyond the specific yield point as it applies to a given yarn construction.

However, this is true for the finished yarn only. Operations in stretch spinning, such as used in the production of certain high-strength synthetic yarns, and also in the making of bulk and stretch yarns, may take place within the critical range past point (Y) where the yarn starts yielding but has not broken. In this region alignment in the internal structure of the yarn takes place.

No two yarns are alike. Materials, twist, conditioning oils, relative humidity, and other factors change. Therefore, a load-extension curve must be made for each new yarn. These records may be kept on file for future reference.

To obtain what may be termed "safe tensions" for the particular yarn measured here, which was 150-denier, 90-filament, we found the lower limit at point (A), where the tension is 25 grams. The upper limit lies at point (Y) which is reached at 140 grams. Midway between points (A) and (Y) we can, therefore, locate point (B), with about 58 grams tension.

Safe operation as far as tension is concerned can be achieved, therefore, by engineering the rpm of the frames, the restraining tension controls of every type, and all other factors in yarn construction to straddle this point (B), or 58 grams, as closely as possible.

From the practical manufacturer's viewpoint, tension should vary not more than plus or minus 10 grams, and preferably less from the optimum for this yarn. All processing operations should, therefore, be run between 48 grams and 68 grams tension.

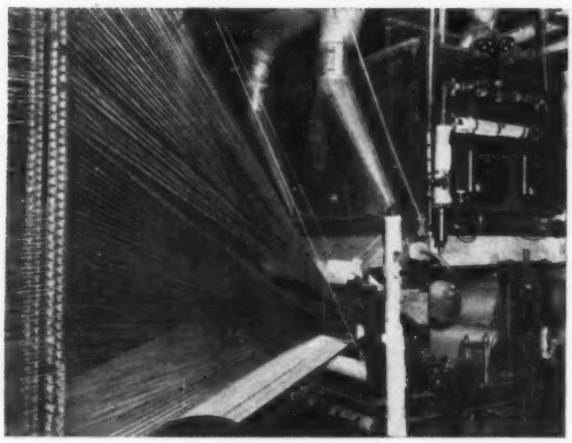
The analysis of this stress-strain curve also offers what appears to be another, even simpler approach to the question of safe tensions. This yarn had 90 filaments, and we found that the middle of the safe tensions was at 58 grams or roughly 0.65 gram per individual filament.

The danger in this latter concept lies in the fact that a generalization is not warranted. Nylon for instance, such as used for full-fashioned hosiery, requires a lower tension per denier as well as per filament. It is advisable, therefore, not to take the easy way but to determine the stress-strain curve for each individual yarn, and operate in that part of the curve where the yarn remains within the limits of elastic recovery.

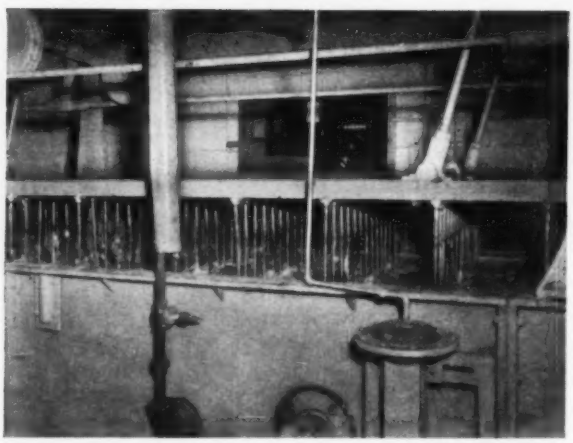
From a practical viewpoint, what matters most is that under standard conditions the yield point must never be transgressed, even under maximum operational tensions. That is to say, we must never approach that part of the tension curve where the yarn con-

Continued on page 125

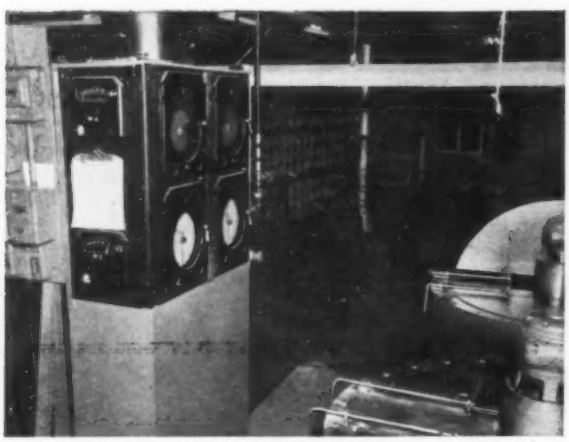
63 Taylor Controllers "A Magee Carpet



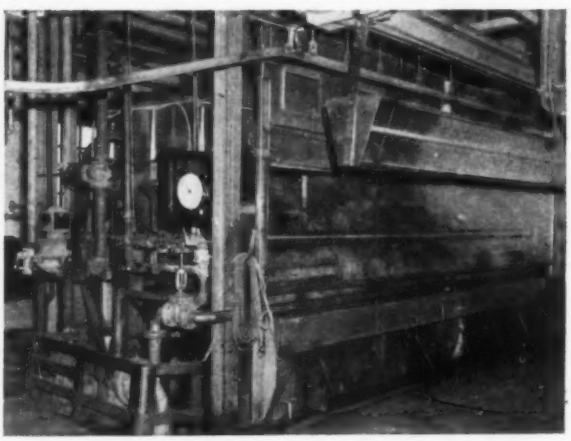
Taylor FULSCOPE* *Indicating Controllers regulating Size Box Temperature and level.*



Taylor FLEX-O-TIMER* *Time Cycle Controller masterminds the dumping cycle in wool scouring operation.*



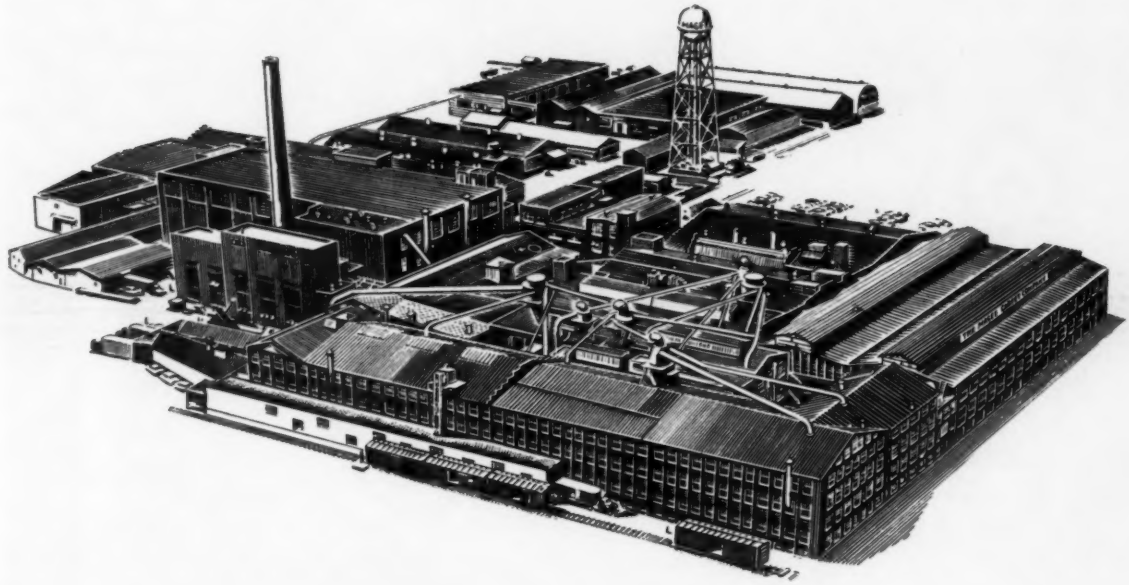
Size preparation control panel. Instruments are maintaining accurate temperature and time cycles.

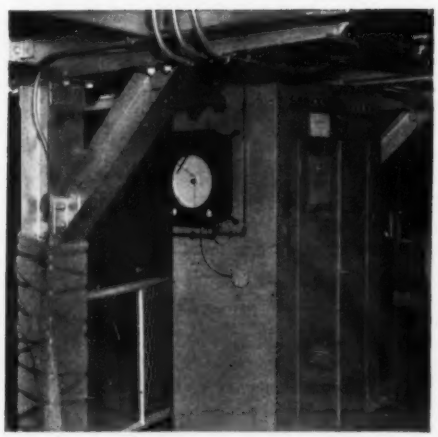


Taylor FULFLEX* *Controller regulates time and temperature on a dye deck for rug piece dyeing.*

Taylor Instruments

help make sure that *is loomed to last"*





Rug drying temperatures are controlled by a FULSCOPE *Dry Bulb Control System.*

The Magee Carpet Company, Bloomsburg, Pa., believes it operates the only mill in the country that is completely integrated in one location. Wool scouring, spinning, dyeing, weaving and finishing—all are carried on at Bloomsburg. All the major weaves are represented in the Magee line, including Velvet, Wilton, Axminster, Tufted and Knitted.

Maintaining the high quality standards established by James Magee back in 1889 has been the prime concern of each succeeding generation. And in today's highly competitive market *uniform* quality is all-important. To help insure it, Magee depends on Taylor controls throughout the manufacturing process, from wool scouring to rug drying. Shown here are just a few of the 63 FULSCOPE Controllers in use at Bloomsburg.

When you are in the market for instrumentation, see your Taylor Field Engineer. And remember that Taylor was the first to serve the textile industry with control systems, back in 1919.

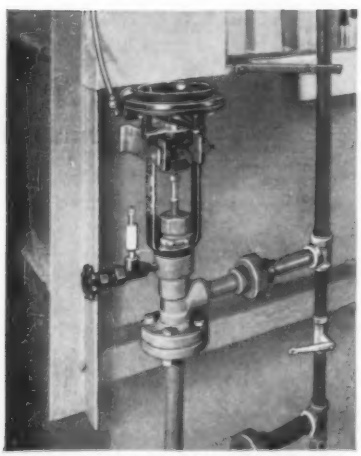
Taylor Instrument Companies, Rochester, N.Y., and Toronto, Ontario.

*Trade-Mark

MEAN ACCURACY FIRST

North Billerica Company reports:

"Foxboro's Concentration Control System cut our sulphuric acid consumption by 15%"—



THIS FOXBORO ALL-PVC NEEDLE VALVE is used in the acid feed line at North Billerica Company. Completely fabricated of chemically inert polyvinyl chloride, it cannot corrode.

System is completely automatic – requires no human attention

Sulphuric acid consumption cut 15% . . . perfectly uniform carbonizing of wool piece goods. That's what happened at the North Billerica Company in Massachusetts when they installed a Foxboro Concentration Control System on their carbonizing bath.

This Foxboro system consists of three components: a conductivity measuring cell, located in the acid bath; a Dynalog electronic Concentration Controller; and a Foxboro PVC Control Valve, located in the acid feed line.

Operation is simple. Operator sets desired acid strength on the controller and walks away. Foxboro does the rest — automatically and continuously feeding a smooth flow of acid to the bath. And control is maintained within .075% concentration (1/10° Tw).

Better uniformity — reduced chemical consumption — continuous chart records — you get them all when you install a Foxboro Concentration Control System. Ask your Foxboro Field Engineer to give you full details. Or write for Engineering Data 220-190. The Foxboro Company, 4811 Neponset Avenue, Foxboro, Mass.

FOXBORO

REG. U. S. PAT. OFF.

tinues to stretch without significant increase of the tension. In the manual test described above, *it can be actually felt when the yarn begins to yield.*

In this manner safe tensions for each yarn can be determined. It is the operator's duty to maintain these safe tensions during all yarn preparatory operations without exceeding the maximum limit of permissible tension.

Results of Excessive Tension. Maintenance of adequate tensions is mandatory for high-speed quality production. At no time must the individual filaments be exposed to excessive tensions. The damage that such can cause is not necessarily to be interpreted in terms of ends down alone. There are more subtle damages; for instance, yarns over-stretched during yarn preparatory or weaving operations dye a lighter shade.

Figure 3 was made from one cone of yarn, using adjacent portions of the identical yarn. However, one part was processed with low tension and the other part was wound with a higher tension. Both parts were inserted in the dye bath simultaneously and handled identically.

The yarn stretched with a higher tension has dyed a lighter shade. In addition there is the difference in gloss (specific reflectivity), in the rigidity, handle, feel, and elastic contraction as a function of tension.

Tension is thus an important factor in making cloth that is not only free from warp streaks and filling bars, but that also has the right "feel." Moreover, in industrial and "Lastex" type fabrics and garments such as girdles and surgical goods, the elastic and contractile properties after finishing vitally influence the life of the fabric and customer appeal. Thus, long before the yarn actually has come to the final break, there can be that subtle yarn damage which impairs the quality of the fabric.

Not only is the question of defects and customer acceptance involved in a program of proper measurement and control of tensions, but there is also the question of industrial and military function. The speed with which tension is applied to a yarn or cord has a great deal to do with the ultimate safe tensions.

FIGURE 3. Higher tensions caused sample at right to dye lighter shade than did the correctly wound sample to its left.

A yarn subject to rapid impact loading such as occurs in a quickly rotating automobile tire suddenly passing over a stone, or the shock tension when a parachute unfolds and then suddenly has to support a man hanging from its shrouds, differs from the slow, quasi-stationary tension applications in the lab and during production. For a further discussion of this fascinating subject, the reader is referred to the literature (3).

In the making of tire cordage, V-belts, and similar materials, the ultimate stress that such constructions will bear safely is influenced by distribution of the strain over all the individual strands that compose the fabric. Thus, as in a cabling operation, each individual strand has to be inserted into the cord under uniform tension.

This distributes the load equally over all the supporting fibers and thus avoids failure and accidents. Where one single strand of the cord has broken, some of the load carrying capacity has ceased, yet the remaining cords are still supposed to withstand the full, original strain.

No cable is stronger than its weakest link. That cord will snap, not because the entire rope is bad but because one strand improperly tensioned on one weak spot had snapped first.

A thread, a tire cord, and similar yarn constructions are essentially cables consisting of a multiplicity of individual strands. Such stranding should be undertaken with identical tension on each component.

Only then is the load and elasticity uniformly distributed over the entire yarn or thread. Only then is the load carrying capacity at its highest and the elastic recovery at its best.

This factor is particularly interesting in the cordage industry, where the writer knows from experience that the lifetime of a well-known tire was nearly doubled by a more uniform distribution of load over the individual components of its cordage. This act involved the systematic use of several tension meters.

Without adding a single cent to the cost of raw materials, and with a minimum of labor (due to the quick trigger action) a vital safety and selling factor was added to a well known tire just by laying all the cords under equal tension into the tire fabric.

Thus, by checking tensions on the individual components while the yarn or thread is manufactured, its elasticity, uniformity of dye absorption, longevity, and ultimate tensile strength can be increased without material expenditure. Rarely is there one single factor so significant for all yarn preparatory operations as the tensions under which they are processed.

Going beyond the tensions in the individual yarn, there are the important factors derived from checking tension in tape-like and sheet-like materials. These enter in running a loom, in wet processing and finishing, as well as in the use of elastic yarns such as Lastex in the manufacture of elastic garments or industrial fabrics.

A tension meter can be fastened permanently to say, for instance, a Raschel machine, a sectional warper, and to many other machines where maintenance of significant tensions is essential. A built-in electric indicating system announces by the flashing of a light if tensions fall below or exceed safe tensions in production.

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1. Saxl, E. J., A New Apparatus for Studying the Elastic Properties of Filamentous Materials, *Rev. Sci. Instruments*, 409-412 (1935).
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3. Smith, J. C., Crackin, F. L., and Schiefer, H. F., Stress-Strain Relationships in Yarns Subjected to Rapid Impact Loading, *J. Research National Bur. Standards* 60, 517-534 (1958).

There's no limit to the lace patterns with the NEW KIDDE 24 BAR RASCHEL KNITTER

Look at the lace in the picture. Every one of those intricate and varied patterns can be made on a single machine . . . Kidde's new 24 bar knitter. Look again at the quality of the lace . . . at the fine detail and the clear outlining of the pattern. That's quality lace turned out at moderate cost.

This new addition to Kidde's line of Raschel knitters is built to operate with 24 bars . . . but can be used with 14 or 18 for less intricate patterns. It turns the lace out fast, too . . . up to 300 courses per minute.

Like all Kidde machines, the new 24 bar knitter is simple, accessible and easy to work on. Equally important, it is ruggedly built to withstand round-the-clock, high speed operation. Write to Kidde for full information.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

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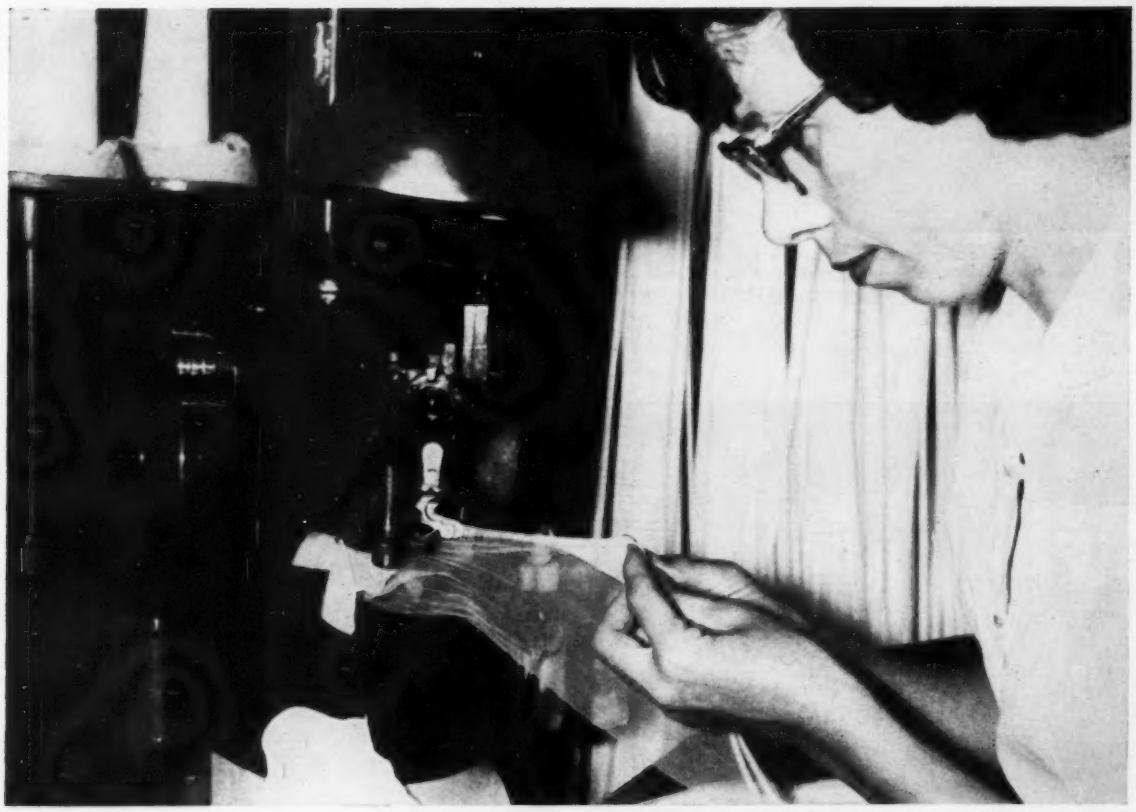
KNITTING SECTION



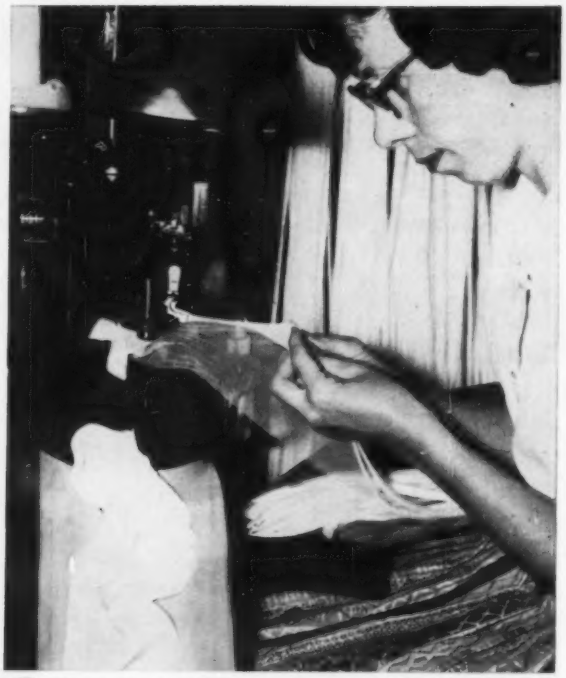
CHAIN SEAMING saves 5 cents a dozen

Staff prepared—Exclusive

A SAVING of about five cents per dozen of full-fashioned stockings produced at the Concord, N. C., and other divisions of the Kayser-Roth Hosiery Co. is attributed to the use of the chain seaming method and a patented seam-severing attachment on the inspection machines.

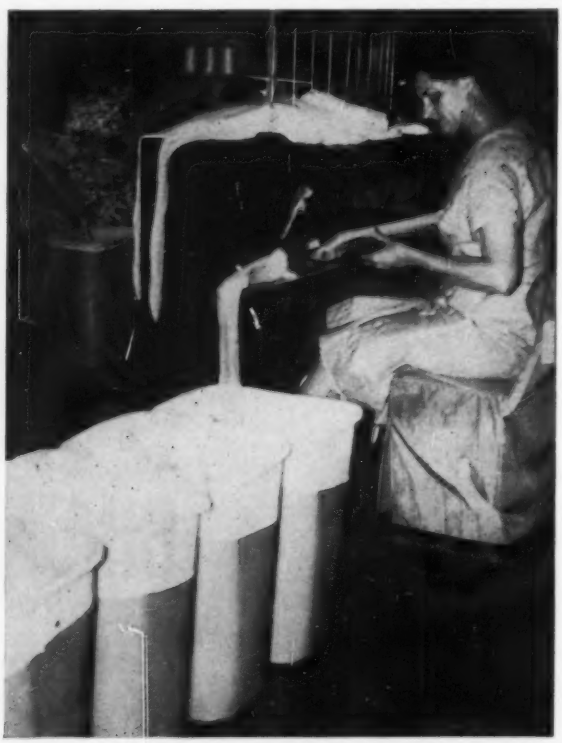
Adopted at the Concord plant in 1957, the system was developed earlier at the company's Ala-

1 The chain seaming process starts with the seaming machine operator removing a bunch from the lot on the truck at her right and placing the one dozen stockings on the work tray (center foreground).



2 Starting with the toe of the first stocking, the operator seams it completely and then begins on second stocking before the first is all the way out of the machine; thus the two are connected by the seaming thread chain.

3 Stockings leaving the seaming machine slide down a smooth chute into a plastic receptacle. After entire lot is seamed, stockings are taken to inspection department in same receptacle.



4 Inspector begins examination of a lot with the last stocking seamed. Note how the receptacles are lined up at the operator's left, utilizing much less floor space than the trays ordinarily used.

mance, N. C., plant. Following are specific benefits provided by this seaming - inspection procedure which is accomplished on existing machinery:

(1) Reduces cost of seaming and inspection approximately 13 per cent.

(2) Saves in mending by reducing handling (there are now only half as many snags and pull threads).

(3) Reduces operator fatigue because of more efficient motion and handling.

(4) Permits more efficient use of floor space by eliminating need for bulky carrying trays—bucket-type receptacles as shown in the accompanying photographs are utilized.

(5) Requires 13 per cent less labor, machinery, lights, and supporting facilities.

Chain Seaming-Inspection at Concord. The procedure is as follows:

Stockings are brought from the knitting room to the grey goods department where seaming and inspection operations are performed. Stockings are arranged on rods mounted on trucks (partially visible in Photos 1, 2, and 3), with one knitter's lot (approximately 15 dozens) on each rod and with one dozen in each bunch on the rod.

The seamer operator takes one bunch (one dozen) off the rod and lays it on the work tray (Photo 1). Starting with the toe of the first stocking, the operator seams it completely, and the seam is started on the second stocking before the first one is all the way out of the seamer; thus, the stockings are connected by a section of seam about 1¼ inches long (Photo 2). As each stocking leaves the seaming machine, it slides down a smooth, inclined trough and into a bucket-type receptacle on the floor (Photo 3). The receptacles are made of plastic and are lined with a soft fabric to prevent snags.

After one lot is completed (15 dozens), a lot ticket is seamed into the chain of the last stocking in the lot. Then an operative takes the seamed lot to the inspection department and gives it to the inspector assigned to that seamer's production.

The inspector starts with the last stocking seamed (Photo 4), removes the lot ticket, places it on the table, and uses the stubs to identify various defects found in the lot.

When the first side of a stocking has been inspected, the operator turns the board to inspect the other side. As the board turns, a cam device trips the severing lever which cuts the chain, thereby separating the stockings (Photo 5).

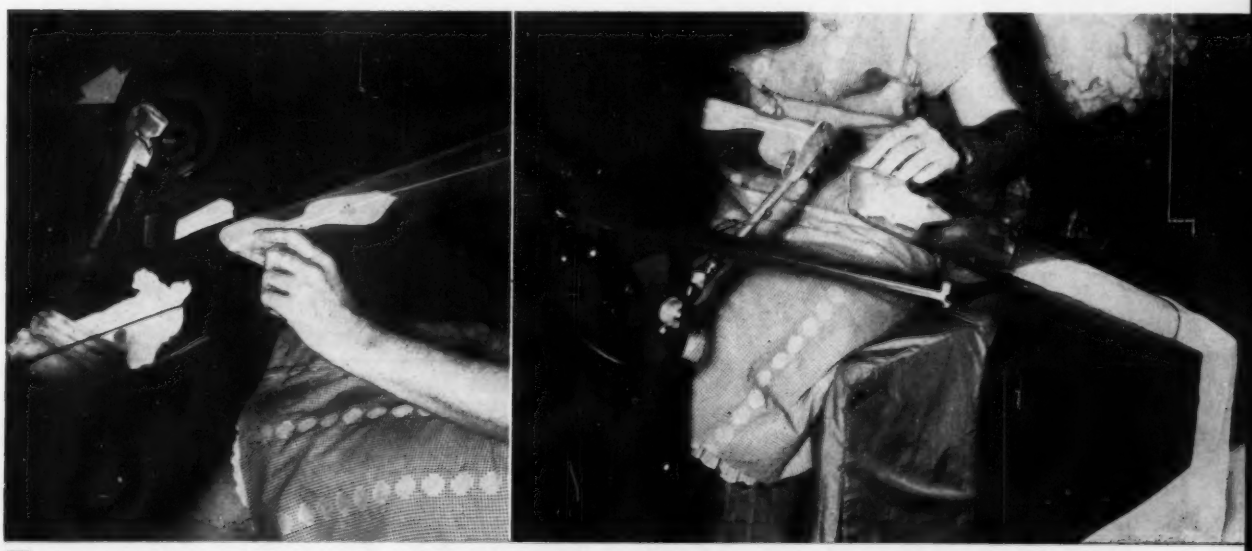
While the oncoming stocking is held by the welt, the operator presses a foot-operated treadle which draws the inspected stocking through the form and blows it into a bag. Then the operator pulls the welt of the next stocking up on the form and repeats the procedure.

Any stockings that have to be returned to the seamer for reseaming are sent immediately to the seamer. The reseams are laid on top of the inspection table to be collected and returned to the seamer who did the work. After reseaming, the stockings are returned to the inspector. After inspection they are returned to the same lot from which they were removed.

These procedures are considered compatible and necessary for economy where the Capelin* system is used, and after several years of use by this progressive group of mills they show promise for further possible cost reductions.

Alamance Industries Inc., Concord, N. C., is licensor for the process.

*S. J. Capelin Associates, Inc., management and production engineers, 261 Madison Ave., New York 16, N. Y.



5 Inspector examines one side of stocking (left photo) and then turns board to inspect other side. As board is turned a cam device trips the severing lever (arrow) which cuts the chain (right photo) connecting the stocking on the board with the next one to be inspected. Compare in these two photos the position of the severing device which utilizes a heated wire to cut the seaming thread. A blade type is also available and was tried at Concord but not preferred.

With this cam bushing and adjustable collar assembly, end play between the driven pinion and clutch #101456 and the knitting machine frame can be easily removed, eliminating need for washers for this purpose. See Fig. 2 below.

More on Komet clutch problems

New parts for older machines simplify adjustment

by K. O. Metz
Exclusive

THE ADVANTAGES of the adjustable connecting link (Part No. 104623) for late model Komet knitting machines with the multi-spline power-actuated clutch shifting mechanism were discussed in the February, 1960, issue of TEXTILE INDUSTRIES [pages 175, 177], and it was suggested that this device (see Fig. 1) should also be helpful in overcoming clutch shifting problems on older machines. In fact, we were already using it on a few old machines.

Since that article was written, more of these new links have been installed on old machines, and in every instance we have found this adjustable unit to be one of the best time and labor savers we have encountered in a long time.

With the adjustable connecting link much smoother clutch shifting can be obtained, and a great deal of the abuse which clutches and pinions must endure through lack of ample adjustment facilities can be eliminated. One of the nice features of this device is that if and when it becomes necessary to do a little readjusting after a machine becomes freed up it can be accomplished in a few minutes by resetting the adjustable bushing #104625.

After considerable checking, we have found that on older machines the connecting link pins are worn and the holes on either end of the old style connecting link are no longer round. This means lost

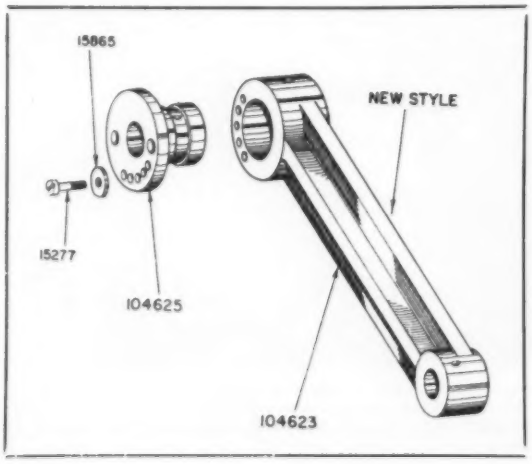
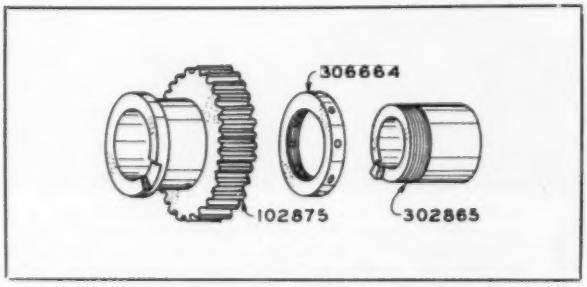


FIG. 1 (left). The adjustable connecting link for late model Komets which the author is using on older machines.

FIG. 2. Sketch of cam bushing and collar pictured above, with part numbers.



motion, and a slight amount of lost motion here gives clutch shifting problems.

If and when a Komet or Links and Links machine begins to shift under strain and it becomes necessary to renew clutches and pinions, we do a complete and lasting job by installing the new adjustable link at the same time.

Two more improvements which we believe are worth mentioning help to give added stability to the old style clutch assembly:

1. In the newer (small) parts catalog for 4" machines, you will note on Plate No. 3 two parts which can easily be overlooked by anyone not having seen them in use on a machine. These are the cam bushing #302865 and the adjustable collar #306664 [see photo and Fig. 2].

This simple assembly is well worth its cost and the labor necessary to install it, as the device permits removal of all end play between the driven pinion and clutch #101456 and the machine frame without resorting to the use of washers. You simply install the bushing and collar with the collar immediately next to the pinion. Since both collar and bushing are threaded, only a few turns of the collar are required to remove all lost motion. Then tighten the set screw in the collar—that's all.

2. Not shown in the old parts catalog is a minor improvement that will help keep a clutch flush against either the right or left pinion by simply providing additional adjustment facilities. We are referring to a new oversize clutch lever roller #305839 which is now being supplied by the machine builder. Simply use the aforementioned part number when ordering rollers in place of the one shown in your catalog.

So, IF AND WHEN clutch shifting problems show up on older machines (and they will), try some or all of the latest improvements we have suggested. You will be glad you did. For after a lot of work has been done, results are measured by *how long a machine stays fixed* and keeps running.

Coated fabrics *(from page 115)*

Tire & Rubber Company have been working for more than 50 years on fabrics and coatings for a wide variety of low and high-altitude flight conditions. Current work is being done under the auspices of the military services and other government agencies, in addition to company-supported research programs.

Among orbital applications envisioned, Mr. Pipitone said, are communications satellites, 300 to 400 feet in diameter, formed or shaped by internal pressure of foamed-in-place plastic techniques.

These devices would be launched in a folded condition and inflated at the proper time, constituting the ultimate in simplicity of erection. Such a facility would provide an object from which to "bounce" radio or radar signals, as has been done with the Moon and Venus, or for use as a relay station, Mr. Pipitone stated.

Several small space cells, inflated and made rigid with plastic, can be connected, directly or by fabric tunnels, to form a station, possibly doughnut-shaped.

Initial erection of a permanent space station can be accomplished inside temporary balloon-like fabric structures until enough of the station is completed for personnel to move inside under pressurized, comfortable conditions, Mr. Pipitone explained.

"The use of fabrics also can virtually eliminate the continual wearing of cumbersome space suits while working outside a pressurized station," he said.

"Self-contained heat and power will be provided by huge expandable solar heat collectors of coated fabrics. These collectors will support a thin metallic film to collect and concentrate the thermal energy of the sun for the operation of a power plant within the space platform.

"Getting man back to earth from orbital flight without burning him and his space vehicle to a cinder may be solved by other fabric applications —one for the vehicle itself, the other for inflated drag balloons to slow down the re-entry vehicle at very high altitude so the rates of compressions and heating could be endured," Mr. Pipitone pointed out. "Tests have proved balloons to be excellent stabilizers at supersonic speeds at all atmospheric altitudes."

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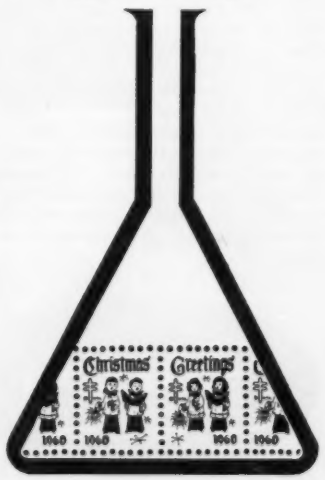


With Dixon's all-new CAVALLA-ROTH* DRAFTING

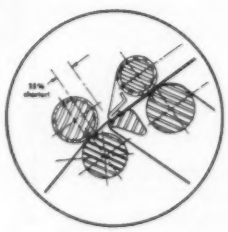
*Pat. Applied for.

. . . the pay-off is in the package!

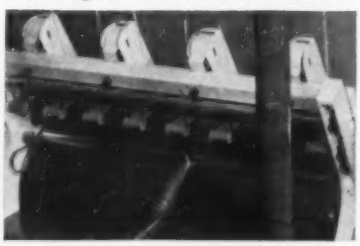
Cavalla-Roth out-features them all. Into this advanced spinning drafting changeover, Dixon engineers have built advantages not obtainable even on the newest spinning frames. And each of these design firsts is aimed at giving you one thing: top quality yarn at lowest cost per pound.

Cavalla-Roth gives full fiber control —

Specially shaped apron nose bar and tensioned lower apron reduce by 25% the uncontrolled space between middle and front rolls. Here, at the critical point in the drafting process, Dixon's unique system controls the fibers, assuring new strength and evenness in the yarn you produce.

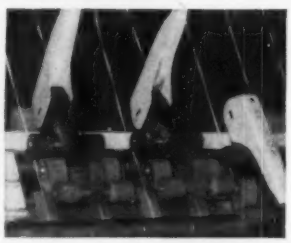


Cavalla-Roth sets a new high in LOW MAINTENANCE —



This is the only NO OIL changeover available. All bearings — both for top rolls and bottom steel rolls — are either of Dixon's exclusive "lube-less" RULON or of the "life-lubed" anti-friction type. Cavalla-Roth's clean Tension Weighting system cuts out dozens of lint-catching surfaces . . . there are absolutely no springs, weights, stirrups or levers below the steel rolls to collect lint and up cleaning costs. And of course, improved fiber control reduces the problems and costs of ends down. Actual mill experience proves this new system is a real maintenance miser.

Cavalla-Roth Weighting — PERMANENT YET INFINITELY VARIABLE . . . ACCURATELY MEASURABLE



The new Tension Weighting system permits positive and permanent setting of top roll weight within a 100 lb. range . . . and most important, allows for accurate measurement of this setting with Dixon's Tension Meter. There are no levers or springs to build up friction, lose adjustment, and vary weighting. The C-R top arm (automatic cam latching) simplifies spinners supervision by making possible roll examination or service without time consuming weight lifting or hand latching. Roll spreads can be adjusted for drafting up to 1 9/16" fibers in two zone drafting and up to 3½" fibers in single zone drafting.

Cavalla-Roth gives APPLICATION FLEXIBILITY

Cavalla-Roth drafting can be tailored to meet your needs: 1) as a complete unit from roller beam up on 60°, 45° or 30° roll stands, 2) as a changeover, using the mill's middle and back steel rolls, 3) as a top roll changeover, using the mill's stands and steel rolls, or 4) as Cavalla-Roth P.C.O. . . . a partial changeover providing the advantages of better fiber control at a minimum cost per spindle.

For photos, engineering specifications, and costs of Cavalla-Roth, write:

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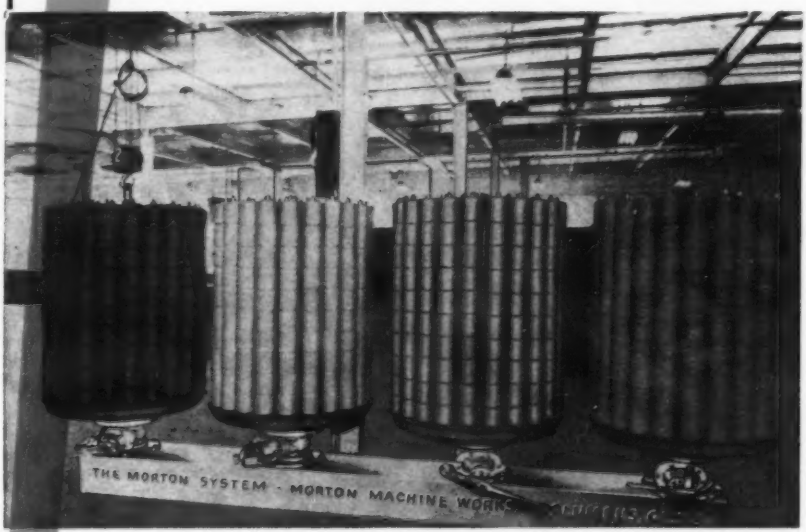

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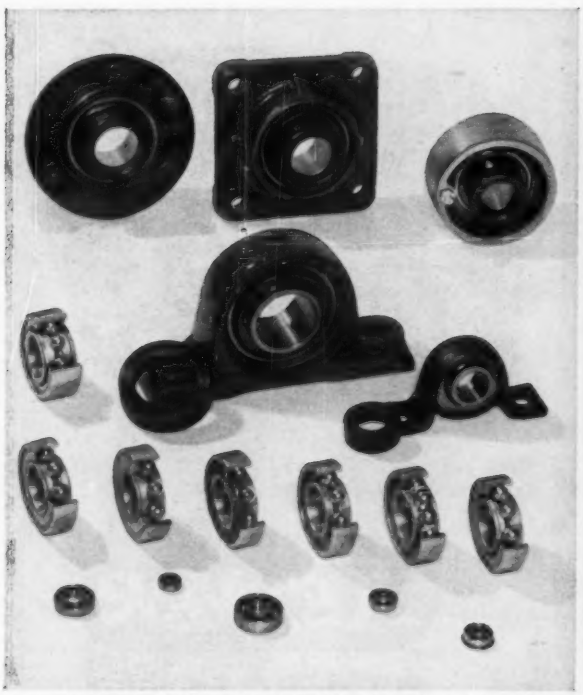
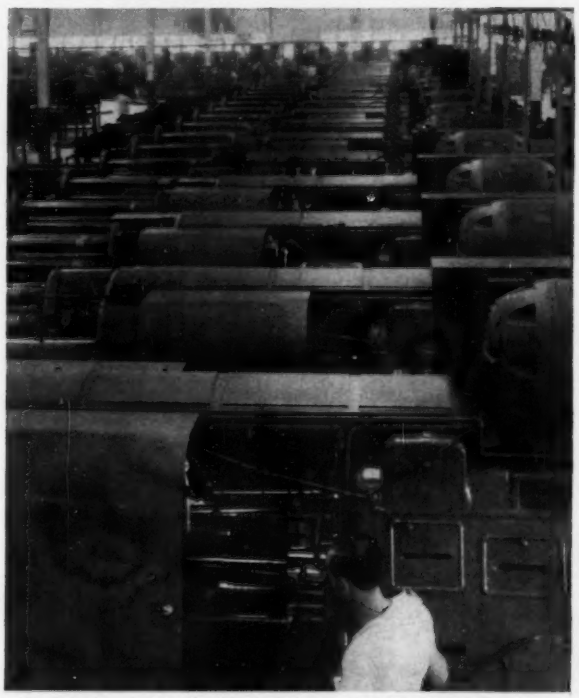


Over 10,000 types and sizes, including a variety of precision tolerances, in Fafnir Ball Bearings can often eliminate the need for "specials". Shown are basic radial bearings, extra-small bearings, and others with typical arrangements of seals and shields.



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- — provides better weaving efficiency even under lower weave room humidities.
- — forms a uniform non-congealing solution.
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- — resists bacterial breakdown, cutting B.O.D. to a minimum and reducing stream pollution.
- — may be used in smaller amounts, reducing operating costs and giving more warp mileage.
- — is soluble in warm water and can be desized without enzymes or other chemicals.

The Keever sales-service man is available at any time for technical assistance on the uses of Glytex. His cooperation in conducting thorough Glytex testing programs in your plant can be invaluable.

Explore the possibilities of improving your operations with Keever's new Glytex CMC.

For more information about Glytex CMC write for data sheet 2000.

THE KEEVER STARCH CO.

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HOW OTHERS MANAGE

A way to cheat the boiler room of damaged sliver cans

THE EDITORS:

Here is a kink that I have used over the past ten years to cheat the boiler room out of card cans which have had their bottoms knocked loose. Previously, we had been discarding five or six cans per week due to this bottom damage that is caused from rough handling. Replacements cost about $6.50 each, so this method of repair has saved us considerable money. The entire procedure requires about 20 minutes.

The rivets sometimes are knocked loose when a severe blow is given the can. Often the metal bottom of the can is damaged at the same time. Too there are often dents made in the rim which holds the can walls, bottom, and kick band together.

This kick band is a major part of the repair routine. Over it is "hung" a hooked band of cotton tie that extends downward to the bottom rim of the can, bends around it and upward along the inside of the rim. Through the bottom portions of this band, and through the can rim it surrounds, are placed new rivets. Of course the can bottom sometimes must be reshaped to fit the rim. When this is done, the rest is easy, as the pictures on next page suggest — the short can was used for its ease of handling.

Back to the kick band and its companion pieces. This is a reinforcing band around the bottom of the can. It rests in the bottom of the rim that forms the part of the can that contacts the floor. The can bottom, a stamped round pan fitted upside down into the walls, also rests in this rim. Of course the can wall does likewise, making the bottom edges of the can walls, the can bottom, and the kick band all relatively even in the bottom of the rim.

Watch a creel hand drop these cans to the floor as he or she upends them to pour out the sliver remaining in the bottom of an exhausted creel. This creel "turning" or piecing out of a run-out must have been devised to give the can manufacturers a boost. Dropping the can to the floor is a most "natural" thing for the creel hand to do, regardless of how much can damage results. Women,

. . . Sam J. Phillips, Jr., of Siler City, N. C., won the kink contest that ended August 15, 1960.

The judges awarded him the $100 prize for his method of fitting an electric stop motion to a winder, a kink that will appear in an early issue of TI.

The current contest ends Dec. 15. Details p. 145.

Mr. Phillips

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TAPEnology licks tricky build-up... cuts downtime, saves dollars!

Now, by spirally wrapping "SCOTCH" Brand Plastic Film Tape No. 549* around your pot-eyes, carrying rolls and drying cans, you can practically stop the build-up of sizing agents, lint and other encrusted dirt in your mill. Result: drastic reductions in downtime for clean-up; decreased output of second quality goods due to soiling; faster production; surer inspection.

Tape No. 549 provides a surface to which practically nothing can adhere. Any minor dirt transfer that does occur can be quickly and easily removed with a damp swab . . . no caustics, heavy solvents or scraping needed! It sticks-at-a-touch; can be applied by anyone right on the production line in just a few minutes.

Your 3M Representative will be glad to advise or assist you in finding opportunities for No. 549 tape to cut costs in your mill. Ask your nearest "SCOTCH" Brand Tape Distributor for details, or write: 3M Co., 900 Bush Avenue, St. Paul 6, Minn., Dept. IAR-110.

Made from DuPont's TFE-fluorocarbon resin.

When tape costs so little, why take less than "SCOTCH" Brand?

"SCOTCH" is a registered trademark for the pressure-sensitive adhesive tapes of 3M Co., St. Paul 6, Minn. Export: 99 Park Ave., New York 16. Canada: London, Ontario.

MINNESOTA MINING AND MANUFACTURING COMPANY
. . . WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY

Tap hook end of strap over the kick band

. . . . bend to start around rim . . . .

. . . . crimp tightly around the turn . . . .

. . . . center punch to guide drill . . . .

"shoot" 3/16" hole through rim, strap

. . . . . spread rivet to tighten . . . . .

with their short arms, seem the worst offenders. It's hard to supervise.

Naturally a can with a loosened bottom lets the sliver begin to pack up unnaturally, causing sliver to jam in the can or letting one mimic the leaning tower of Pisa. This aggravates coil placement, too, and can create much grief as the sliver is drawn from the can.

Start the repairs by measuring strips of bale tie long enough to fit over the top of the kick band (a one-inch hook at the top is sufficient) and to extend down and around the bottom of the rim and upward to the metal bottom of the can.

With the strap crimped around the rim, clean out all fiber, press the bottom in place, drill a 3/16" hole through the strap and rim, and peen a soft-metal rivet (large round head) into place to secure the strap. I put four of these around the bottom, and the cans sit up on the turntables very well. Three will let the cans sit solidly on any floor, however, if the three are sufficient reinforcement.

. . . . . flatten strap against can . . . . .

. . . it works! This can is 10 years old.

CONTRIBUTOR No. 1262

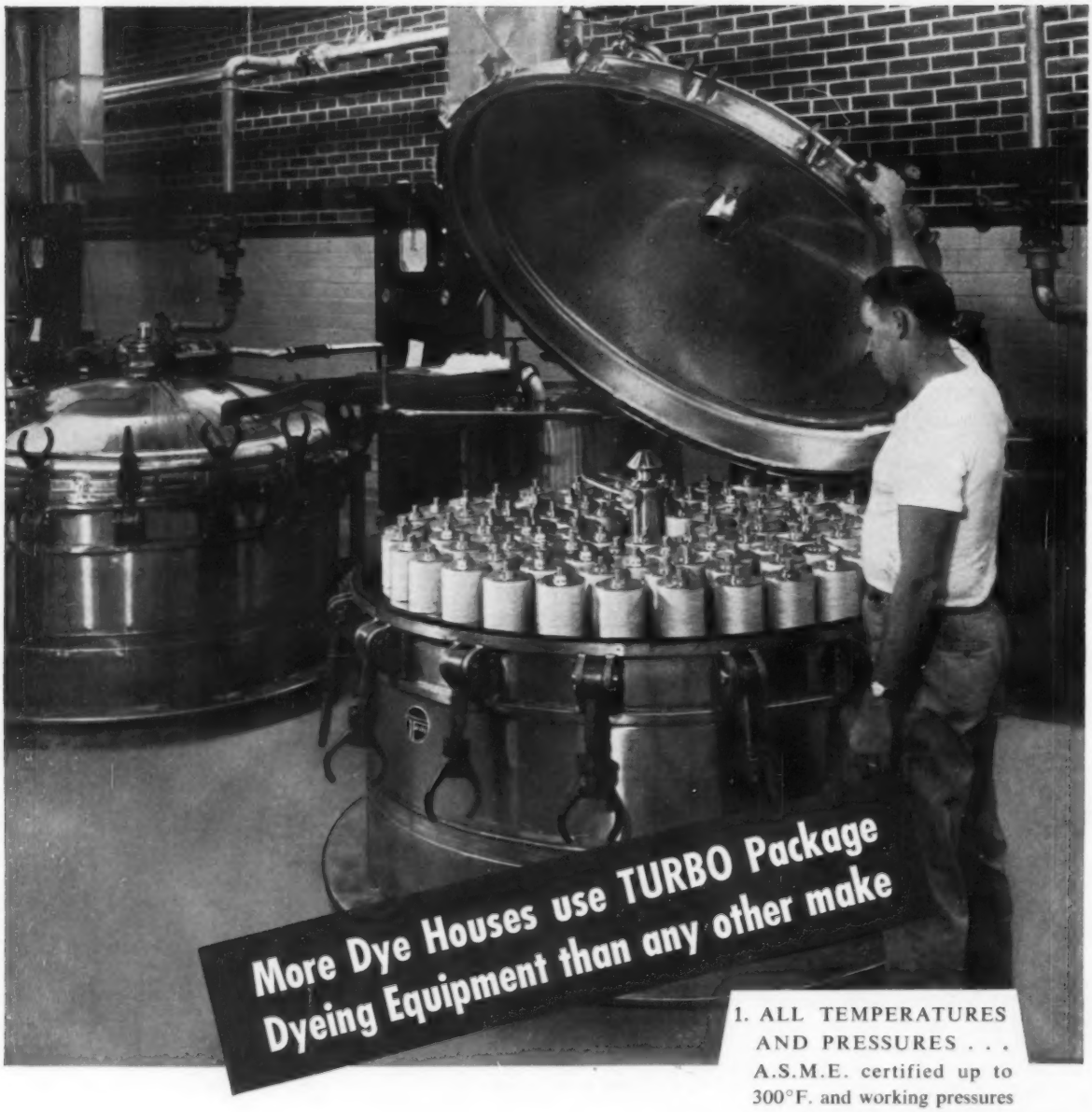
Comments on the article "Slashing Creslan"

THE EDITORS:

We have just gone through your August 1960 issue, and were very interested in the article "Slashing Creslan."

We thought it a very good article in general and one that should be helpful to the folks in the mill.

However, would like to comment that the paragraph on after-waxing made a couple of recommendations which are not in line with mill practice as we generally see it. In general, a special wax is usually used for after-waxing. The



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3. Carriers to accommodate 4 or 6 packages high.
4. Spindle spacing to accommodate your requirements.

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TURBO

TURBO MACHINE COMPANY, LANSDALE, PA., U.S.A.

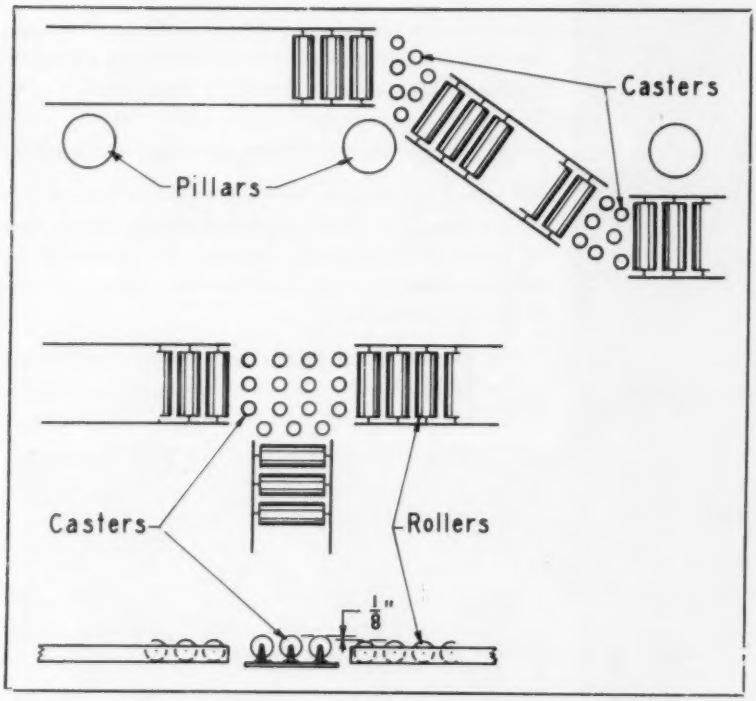
wax used in the mix itself is designed to be part of the size film, and although it is emulsifiable in the starch mixture, a type of synthetic material which is more readily emulsifiable in plain water is usually used in after-waxing. These qualities are exemplified in our synthetic material.

On speaking of the rate of speed as being 1/10 of the machine speed, we presume that your source of information was referring to the ratio of the speed of the yarn relative to the surface of the roll as it passes over. I believe that you will find that this is about 10 times too fast, and that a roll surface speed of this magnitude would put a great deal more than the 1% of after-wax that is normally recommended.

The effect would be somewhat the same as over-oiling a loom —excess lubricant would be all over the place and probably cause more trouble than not having enough.

PAUL SEYDEL, D. Sc.
Seydel-Woolley & Co.

Simple way to make conveyor turns



THE EDITORS:

Roller conveyors are widely used for moving boxes, cartons, cases, bales, skips, rolls of cloth, etc. In many departments in the textile industry, roller conveyors in a straight line are, of course, a standard item, and various fittings such as curves of different angles can be specially made. This tends to be expensive and also may take a considerable time to obtain.

In addition, the desired curve has to be specified when ordering. We have found a simple and very flexible method of running roller conveyors in various directions. This is achieved by mounting roller type casters in an inverted position, with the roller surfaces upwards on an appropriate board sheet steel plate. It is important to have the running surface of the casters ⅛" higher than the rollers on either side of them.

In this way the object being transported can be very readily turned from one length of roller track to another by pivoting over the roller casters. Two layouts demonstrating this principle are shown in the accompanying box.

CONTRIBUTOR No. 1264

Who can make it?

. . . . a text book on cotton mill operations for specialists such as engineers and cost analysts who must assume responsibility within the plant without the benefit of a thorough education in mill problems?

. . . . a moisture content indicator or controller for fabrics containing metallic yarns? A unit employing dielectric heat to instantaneously dry a small area for immediate comparison with a moist adjoining area might work.

. . . . a means of measuring yarn lengths without weighing the yarn or requiring contact with it? Sound impossible? Maybe so, but a fortune awaits the inventor.

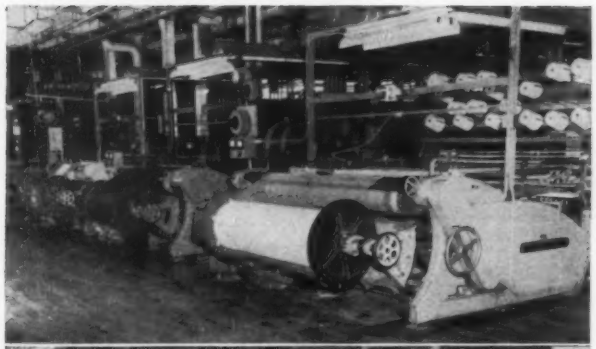
. . . . an instrument for measuring the temperature of revolving polished steel rolls without using a friction or wearing type contact which would mar the surface?

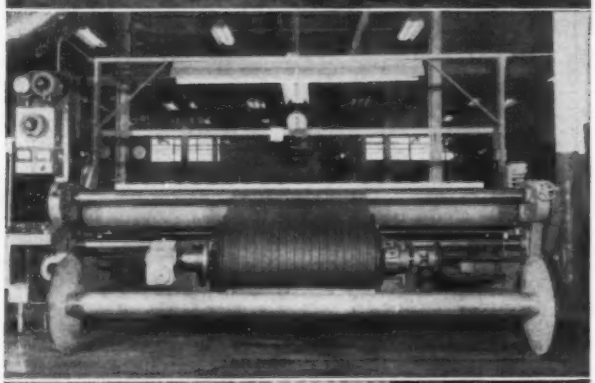
. . . . a device to predict cloth "hand" depending upon the moisture content, temperature, and stiffness as it is being processed?

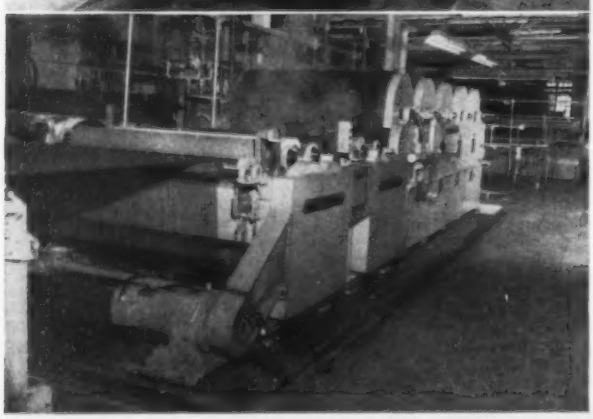
. . . . a practical and reliable vacuum type cleaning machine to handle oily waste and lint?

Need Money?

Send TI your kinks, short cuts, etc. (the rules are on p. 145)







THE COCKER GH SLASHER VERSATILE EFFICIENT

Shown here are several views of part of a Cocker 9 cylinder GH Slasher installation at Swift Manufacturing Company, Columbus, Ga.—one of America's most versatile mills. These slashers operate on Acetate, Rayon, Nylon, Cotton and blends—stripes, solid colors, as well as greige goods.

The second picture demonstrates the extreme flexibility of the Cocker GH Slasher—accommodating beams from 36 inches to the 128 inch beam shown in front of the machine—with no projecting spindles. Note also, the convenient control panel.

Shown clearly in the third picture is the revolutionary Cocker Torque Tube Drive* which eliminates troublesome belts, chains, sprockets, etc. This greatly reduces maintenance and simplifies changing beam widths.

The lower picture shows the cylinder section and two Model DA Size Boxes.

Due to especially heavy warp construction, maximum speeds on this particular installation are approximately 100 yards per minute. In other mills, Cocker GH Slashers are operating at speeds up to 184 yards per minute on lighter constructions.

We believe that the new Cocker Model GH Slasher is the most efficient and versatile slasher in the World. Let us give you full information.

*Pat. Pending

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WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

Direct-current range drives mounted overhead

Direct-current drives are helping four finishing ranges to process approximately 3,000,000 yards of broadcloth a week at The Springs Cotton Mills finishing plant, Grace's Station, S. C. In addition to broadcloth, company produces sheeting, sateens, handkerchief goods, combed lawns and similar fabrics.

In the first such application in the cloth-processing industry, the drives (induction voltage regulators; 3-phase, full-wave silicon rectifiers; and control equipment) provide controlled direct current at 32 to 250 volts from the plant's 550-volt, 3-phase, 60-cycle a-c power system.

Each of the finishing ranges uses d-c motors (in ratings from 3 to 40 horsepower) to drive individual machines at the co-ordinated speeds necessary to prevent cloth slacks and breaks. The drives enable armature voltage control to adjust speeds of all motors over a scale of approximately 8 to 1.

The lightweight, compact units were mounted overhead to save production space and reduce installation costs. According to the mill management, this was a primary factor in the selection of the static conversion equipment.

Earlier ranges were powered by motor-generator sets housed in special, air-filtered rooms. Separate locations were necessary because large generators, if installed near the ranges, would accumulate lint and dust. Blowing out this lint and dust could easily spoil cloth passing through the range, production men said. With the separate rooms already filled, overhead mounting of the Inductrol units was of real benefit, officials said.

The first installation of the d-c units was on two of the wet processing ranges. Because of their highly successful performance, they were obtained for two additional finishing ranges, a mercerizer and a dye range.

Although these drive systems were the first of their type to be used in the cloth-processing industry, only minor problems were encountered in the initial start-up. Since the break-in period of the two initial finishing ranges in September 1958, no production time has been lost because of failure or maintenance of the voltage regulators, rectifier units, or associated controls. They are now operating with once-a-month inspections.

COURTESY GENERAL ELECTRIC

Direct-current drives, mounted overhead at the extreme left, power finishing ranges that process more than 3,000,000 yards weekly at The Springs Cotton Mills.

Storing wet rolls or warps

THE EDITORS:

In a dyehouse, it is often necessary to store rolls of wet cloth or beams of wet yarn between one process and another. This may occur between dyeing and drying, but also storage of the cloth or yarn may be an essential part of the complete process; for example, allowing time for the desizing enzymes to solubilize starch sizes or to allow the combination of dyestuff with fiber to take place when using reactive dyestuffs.

If the roll of yarn or cloth is allowed to remain stationary for more than a few minutes, liquid migration to the lower half will have occurred and irregular treatment, whether drying or chemical reaction, will take place.

It is, therefore, essential that some simple method of slowly revolving the roll should be employed. Slow turning at say 2 rpm is quite sufficient. It is essential that the means employed should be very flexible so that the roll can be turned wherever it is located in the dyehouse. Normally the rolls are mounted in some form of bearing, possibly on a truck.

A suitable driving unit for turning the rolls can be made from a small hand tool motor, say ¼ hp, and an appropriate gear box which will have to provide a speed reduction of say 700 to 1. Any small motor/reduction gear combination giving this power and output speed is suitable.

The motor and gear box require building into a compact unit which can be clipped or bolted easily to the side of the rack or truck supporting the roll of yarn or cloth. A simple clutch coupling to connect the gear box output shaft

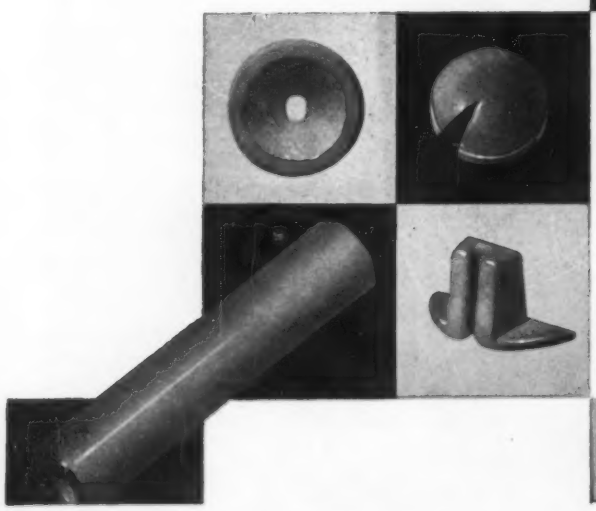
ROYAL WORCESTER INDUSTRIAL CERAMICS LIMITED

(A DIVISION OF ROYAL WORCESTER LTD.)

TONYREFAIL, GLAMORGAN, GREAT BRITAIN.

HARD CERAMIC

TEXTILE GUIDES

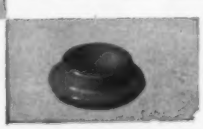


'Regalox' Ceramic Thread Guides possess a hardness of between Sapphire and Diamond (9 Mohs) and combine the qualities of resistance to abrasion, great mechanical strength, resistance to mechanical and thermal shock and chemical reaction.

'Regalox' means — long life, low maintenance and a better finished product.

'Regalox' The precision made hard, strong, smooth and wear resistant ceramic.

We invite you to send for samples, literature, or technical advice to our American Agent:—



ROY D. FAIGENBAUM

7420 Mountain Avenue, Melrose Park
Philadelphia 26, Penna.
Telephone: MElrose 5-4072

with the center bar of the roller will provide the necessary drive.

By using a flexible lead from the motor to a socket on the wall this type of drive can be employed in any part of the dyehouse or finishing works and left running as long as necessary.

To avoid drying out at the selvages of cloth or on the surface layers of cloth or yarn, it is useful to cover the roll with a sheath of polythene with a good overlap at the edges so that the ends can be tied round the shaft to completely envelope the cloth. This ensures that the stored material does not cause drips on the floor, and any chemical reaction which is required takes place very uniformly.

CONTRIBUTOR NO. 1266
(England)

Suggests spooler starter color-coding method

THE EDITORS:

Most of my customers in this area color code double head twister spools by sinking 12/32" holes ⅛" deep (made with a flat-tip drill) into the heads and pressing a 13/32" colored paper cut-out into hole. The paper cut-out is stiff enough to stay in place in high-speed operations but can easily be pryed out with a knife point. Perhaps the practice can be extended to plastic spooler starters.

The paper disks can be supplied in several diameters and colors.

ROSCOE SPENCER
Spool Identification Disc

How important is laboratory relative humidity?

THE EDITORS:

Mills that have a testing department for silk sewing thread purposes but do not have this department completely air conditioned may be interested in a testing laboratory similarly situated.

In this laboratory the main room itself was not air conditioned, but it did have a humidifier system for adding humidity when the air became too dry. When the humidity exceeded the intended standard of 45%, pans containing calcium chloride were placed around the room.

Within the department there was another small room, used as a dark room, with standard equipment including lighting, a blackboard machine for winding the silk, and a rack on which the boards were placed for evaluating the silk yarns. Temperature and humidity of both the outer and inner rooms were checked daily for a period of six months and the results, averaged monthly are shown in Table 1.

In the larger room the regular testings were done, such as sizings for yards per ounce, twist, and strength. The latter were made on both a regular tensile strength tester and an incline plane machine.

It will be noted from the table that the temperature in the small room was slightly lower over the six months period, whereas practically no change is noted in the relative humidity between the two rooms.

There was an increase in the temperature in both rooms during the summer months, and the percentage of relative humidity increased beyond the desired 45%. However, this mill, which produced a large quantity of silk thread, did not have any trouble in its testing and had very few complaints about its product from the customers.

CONTRIBUTOR NO. 1119

TABLE 1

Average Temperature and Relative Humidity for Silk Testing

Month	Average temperature		Average humidity (%)	
	Inside small room	Outside small room	Inside small room	Outside small room
March	74.0	79.0	40.9	37.0
April	72.5	79.0	39.0	37.7
May	73.9	76.5	40.6	40.8
June	79.5	76.2	47.5	48.1
July	78.5	77.6	53.6	55.1
August	81.0	80.4	57.9	59.5

KINK CONTEST RULES

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance and the $100 award will be made to the winner as soon as all entries are judged.

The contest rules are simple:

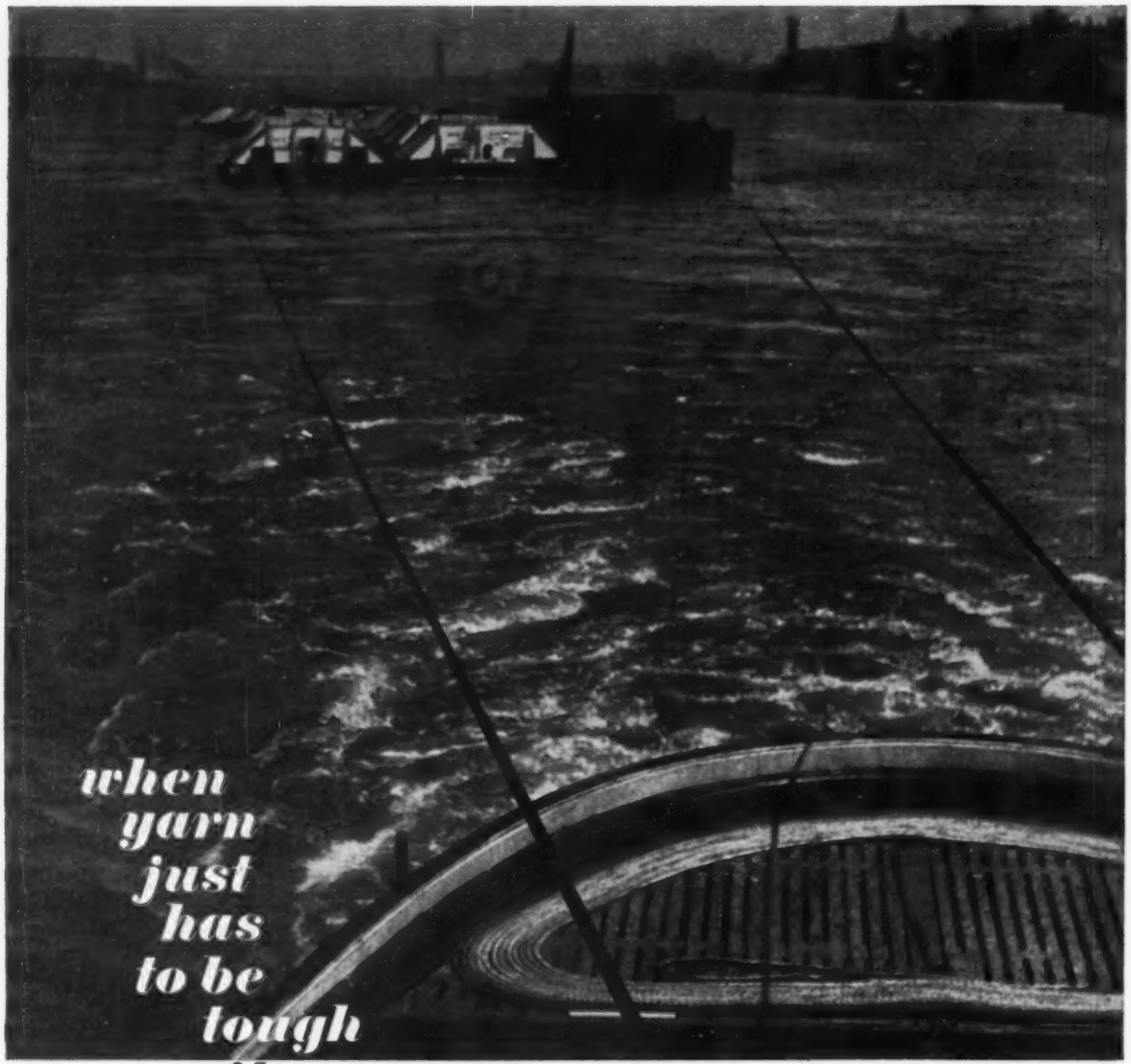
► All contributions must be postmarked not later than midnight, December 15, 1960.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Georgia.



Golden Caprolan Nylon

It takes a tough yarn to deliver the goods — and tough is the word for high-tenacity Golden Caprolan® by Allied Chemical. But Golden Caprolan is more than just a tough yarn. It is a remarkably versatile yarn that offers a unique combination of superior performance qualities including unsurpassed resistance to abrasion, excellent rubber adhesion, greater resistance to flex fatigue, and troughing qualities not obtained from other yarns. Golden Caprolan established a new criterion for heat stability in nylon tire yarn and a new standard of strength for heavy-duty marine ropes. Golden Caprolan is performing superbly in conveyor belts, tarpaulin fabrics, high-strength industrial webbings, and other applications where heavy-duty performance is essential. If you have a tough job, we have the tough yarn for it. Our technical service, end-use development and fiber application staffs are ready to help.

Fiber Marketing Dept., 261 Madison Ave., New York 16, N. Y.

GOLDEN caprolan
NYLON OF THE 60's

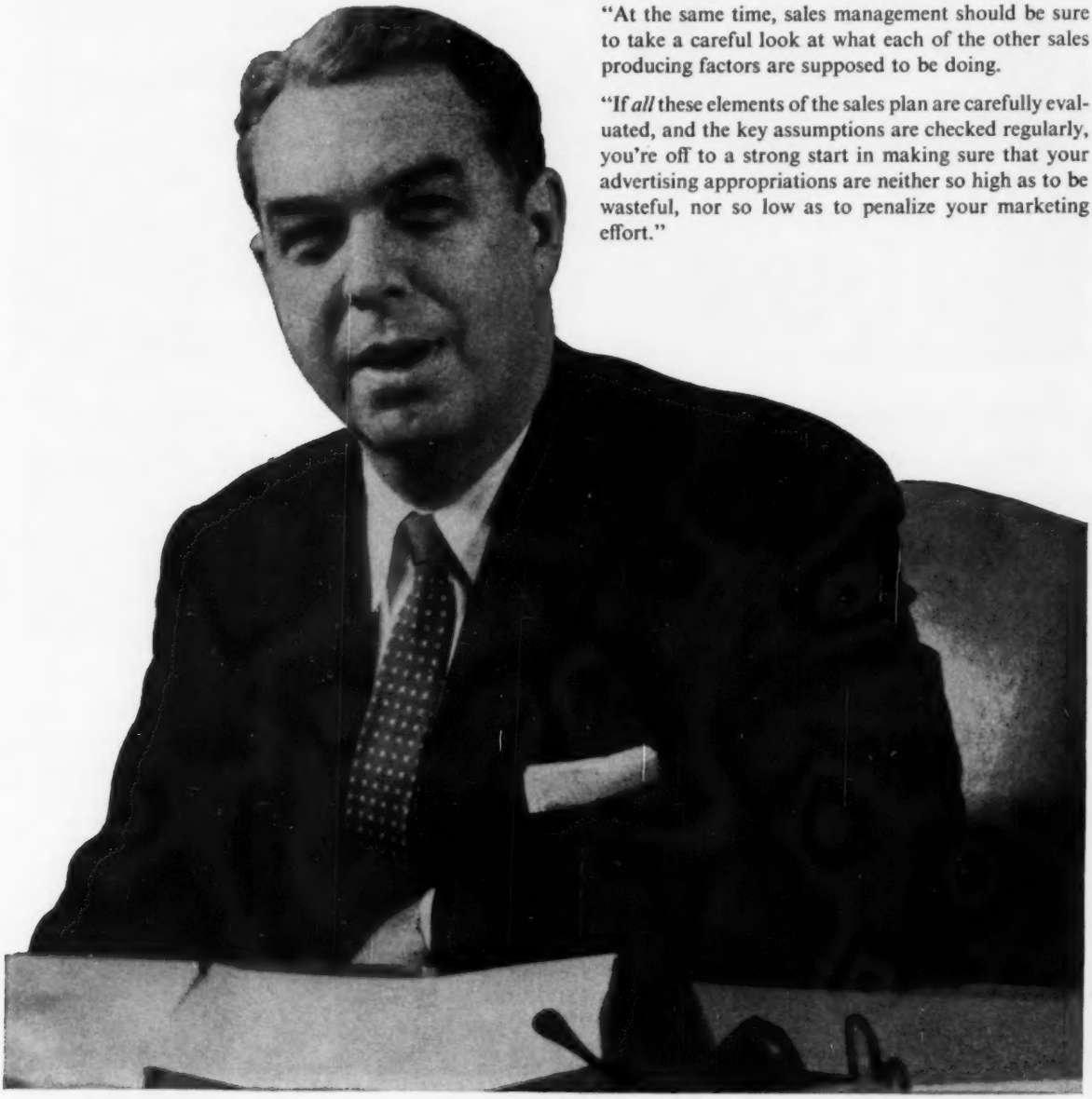
"How much is enough for advertising?"

JOHN R. SARGENT, partner in the nationally-known management consultant firm of Cresap, McCormick and Paget, points the way toward solution of one of top management's knottiest problems.

"Good sales management generally knows the crucial sales problems faced by each one of its products. Through good advertising advice plus experience, trial and error, and some judicious advertising testing, sales management also can come to have a good understanding of what advertising can and cannot do.

"At the same time, sales management should be sure to take a careful look at what each of the other sales producing factors are supposed to be doing.

"If *all* these elements of the sales plan are carefully evaluated, and the key assumptions are checked regularly, you're off to a strong start in making sure that your advertising appropriations are neither so high as to be wasteful, nor so low as to penalize your marketing effort."

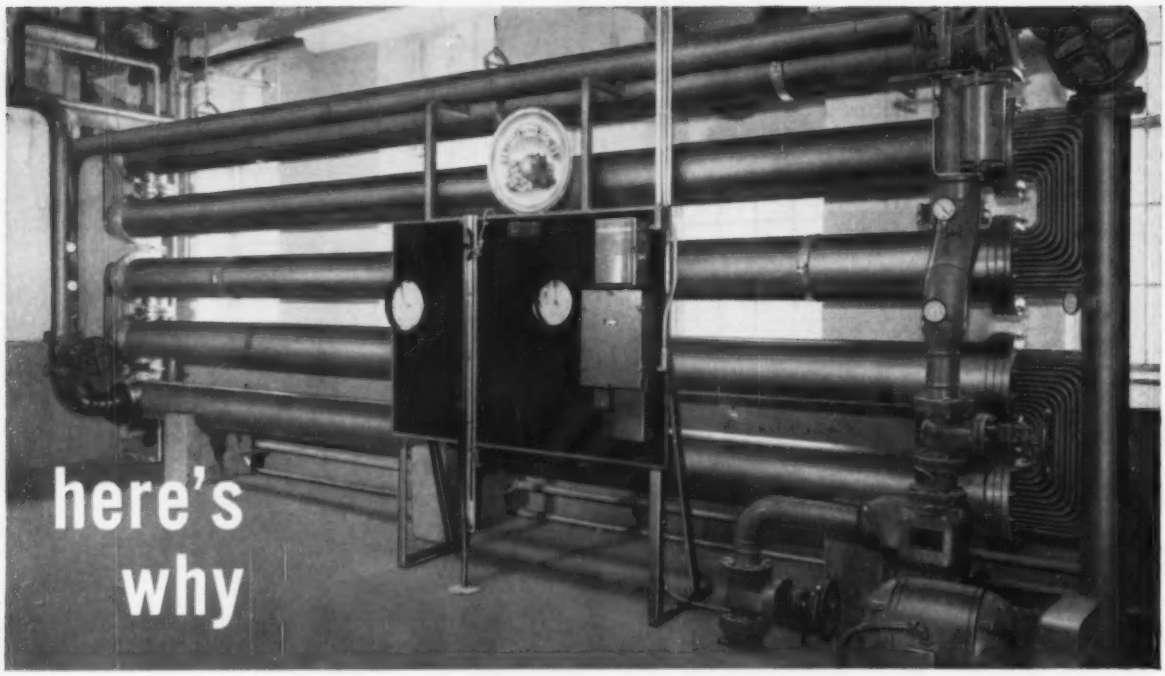


AIA

ASSOCIATION OF INDUSTRIAL ADVERTISERS

271 madison avenue • new york 16, n. y. • telephone murray hill 5-8921

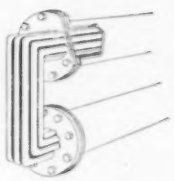
An organization of over 4000 members engaged in the advertising and marketing of industrial products, with local chapters in ALBANY, BALTIMORE, BOSTON, BUFFALO, CHICAGO, CLEVELAND, COLUMBUS, DALLAS, DENVER, DETROIT, HAMILTON, ONT., HARTFORD, HOUSTON, INDIANAPOLIS, LOS ANGELES, MILWAUKEE, MINNEAPOLIS, MONTREAL, QUE., NEWARK, NEW YORK, PHILADELPHIA, PHOENIX, PITTSBURGH, PORTLAND, ROCHESTER, ST. LOUIS, SAN FRANCISCO, TORONTO, ONT., TULSA, YOUNGSTOWN.



textile finishing plants recover MORE DOLLARS from process waste water with a LUDELL System of Heat Recovery

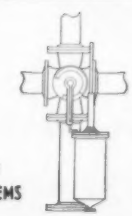
❶ Guaranteed to recover all of the heat economically feasible — *continuously*. ❷ Guaranteed self-cleaning — there is no efficiency loss due to fouling and plugging — no down time. ❸ Automatic operation — requires only a periodic mechanical checkup. ❹ Expansible — easily keeps pace with any future plant growth. ❺ Lowest maintenance cost — turns more B.T.U. into profits.

No textile or laundry plant should overlook the inherent advantages in a Ludell system for recovering the heat from process waste water. Equally important is Ludell engineering know-how. Over thirty years of specialization in the field of heat recovery is in back of these systems. To date, there have been over one-thousand installations. It will pay you to investigate a Ludell System of Heat Recovery for your own plant. Send a card to Ludell today for complete details.



CONTINUOUS TUBES. Only the Ludell System has the patented continuous tube feature that permits lint and other solids to be completely back-flushed directly to the sewer. Once a solid enters a tube, it will pass completely through the tube.

NO MULTIPLE TUBE SHEET ENTRANCES. There are no cavities or tube sheet entrances where solids can impinge, or accumulate and disrupt the flow of water through the system. Accumulation is confined to the inlet tube sheet for only a short period of time, after which at set intervals it is backflushed out of the system and *directly into the sewer* without being strained through another tube sheet.



AUTOMATIC BACK-FLUSHING. Timed automatic backflushing, combined with the Ludell exclusive, continuous multi-tube construction, fully and completely prevents clogging or stop-up of the system and maintains maximum high heat transfer.

Ludell

Manufacturing Company

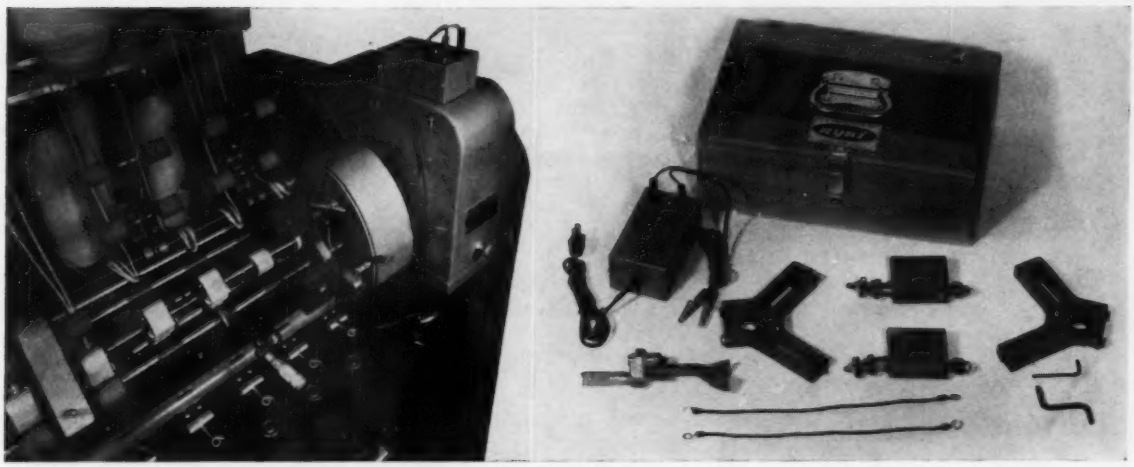
5200 West State Street • Milwaukee 8, Wisconsin

Representatives in the United States, Canada and Alaska

MANUFACTURERS OF LUDELL SYSTEMS OF HEAT RECOVERY, LUDELL SYSTEMS OF HOT WATER HEATING, AND WHEELER SELF-UNLOADING WASHER

NEW PRODUCT PARADE

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors.



Align a frame's rolls to .005" in just 2 hours with this equipment

The Micro-Electric Roll Aligning Kit recently introduced enables mill mechanics to check, align, and level all rolls and stands on a spinning frame in only two hours. Also, this equipment permits roll alignment to within .005", thereby reducing power consumption, increasing bearing life, and lowering maintenance costs.

The efficiency of this equipment, which may also be used on fly frames, drawing frames, twisters, and winders, makes it practical to check alignment several times a year.

F. A. Young Machine Co., P. O. Box 884, Gastonia, N. C.

Do you want more data? Write ◂▸ supplier or use card on page 167; list L-118

How to double cleaning efficiency of No. 11 condensers

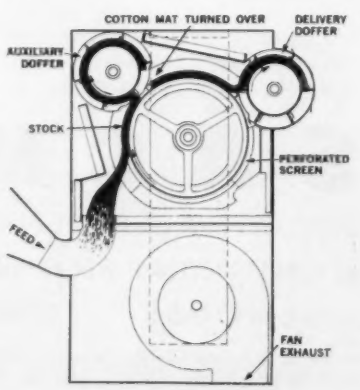
Cotton mills with the Saco-Lowell No. 11 Dust and Waste Extractor in the opening line may get additional cleaning of stock processed simply by applying a new Auxiliary Doffer Changeover to the condenser. The quantity of trash removed by the double doffer arrangement is at least twice the amount removed by the conventional unit; thus, the effect is that of adding another condenser to the line. Waste is predominately pepper trash.

Action of the second doffer reverses the cotton mat, allowing both sides to be cleaned by the air stream.

Installation of the auxiliary doffer requires only minor work and may be accomplished in a short time. The double doffer arrangement is standard on all new No. 11 condensers.

Saco-Lowell Replacement Parts Division, Saco-Lowell Shops, Greenville, S. C.

Do you want more data? Write ◂▸ supplier or use card on page 167; list L-119



ER

DRAWING FRAME

for cotton and staple fibres up to 3 1/8" (80 mm)

A fine set of high speed drawing frames in an important spinning mill

— Do you also want to modernize or extend your Drawing with the most modern frame in production ?

— This installation has been setting production and efficiency records for a year. Many new mill installations such as this one are going up in various countries : United States, Great Britain, Germany, Italy, Spain, India, Argentina, France, etc.

— The outstanding two-head SACM Drawing Frame attracted abundant interest and favorable comments at recent Textile Machinery Exhibitions, and is hailed as a forerunner of modern textile machinery design, unequalled for
  — Human Efficiency
  — Frame Efficiency
  — Sliver Quality

— Why not look into it now ! You will be surprised by the low investment per pound of effective hourly production, by the low operating cost and huge savings in floor space.

— Ask about the patented no-lap drafting system, perfect evenness of sliver produced, high precision and accessibility, easy settings, positive-drive creel. Arrange to see a demonstration.

The ER is manufactured by the

SACM

SOCIÉTÉ ALSACIENNE
DE CONSTRUCTIONS MÉCANIQUES
MULHOUSE FRANCE

In the U. S. A. and Canada, Sales and Service of SACM machinery for cotton and short-staple synthetics are exclusively provided by MEDLEY MANUFACTURING COMPANY, Columbus, Georgia.

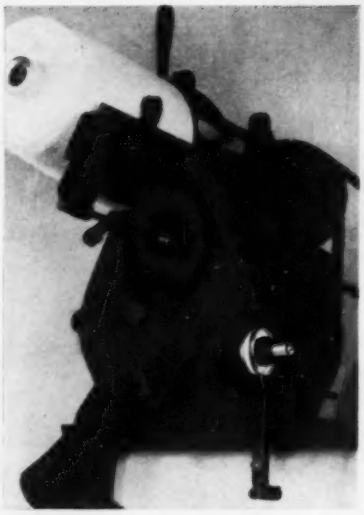
Maintains constant tension in yarn being wound

An electromagnetic yarn tension control gives accurate, sensitive control of tension during coning of spun or filament yarns while greatly reducing yarn wear and scuffing. It minimizes dye streaks, uneven package dyeing, strip backs, and broken filaments.

The device, called the Cona-Mag, not only maintains constant tension on each cone but insures equal tension on all cones because many units can be controlled from one central potentionmeter.

Tension is kept constant regardless of cone diameter or speed because the traverse arm actuates a separate control on each spindle that gradually lets off tension in proportion to the increase in cone diameter.

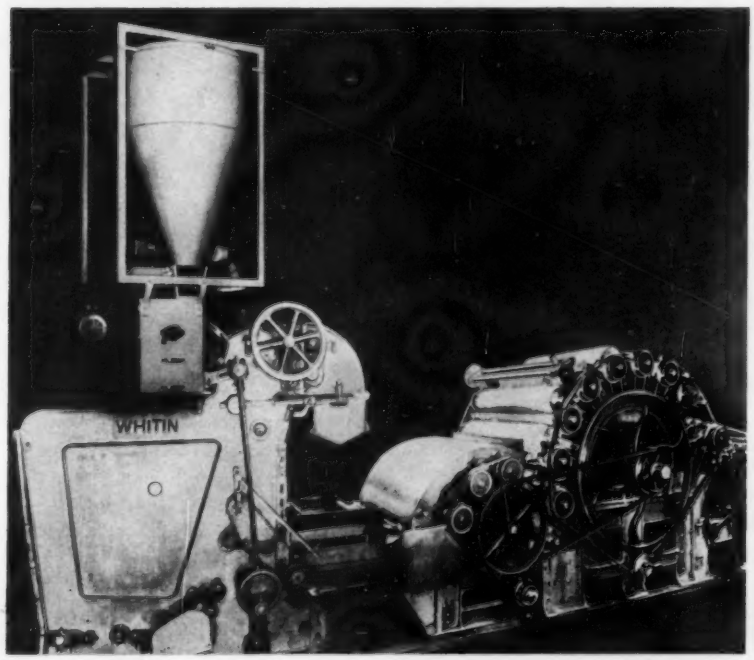
The tension device consists essentially of two steel discs between which the yarn passes. Tension is varied by drawing the discs together by an electromagnet which is controlled by the central potentionmeter.



Fabrionics Corp., Box 521, Huntington, N. Y.

Do you want more data? Write ◂ supplier or use card on page 167; list L-120

System eliminates loss of good fiber at card



The Windle Waste Control System for woolen cards operates continuously to completely eliminate loss of stock being processed. Fly is automatically collected, cleaned, and reintroduced to the card at the feeder. Continuous removal of fly from the card reduces fire hazard and eliminates contamination of lots by fibers blown from one machine to another.

A duster, blower, and separator are compactly contained in a single unit mounted above and independent of the feeder. So complete accessibility to the waste control unit and the feed box is provided.

Windle Engineering Co., Inc., Millbury, Mass.

Do you want more data? Write ◂ supplier or use card on page 167; list L-121

Easy-to-remove loom camshaft gear

A new cam shaft gear adaptable to any loom appreciably reduces downtime for replacement of these gears. The gear incorporates a tapered bushing that permits the loom fixer to remove it without special equipment. The bushing is sufficiently elastic to be forced open without breaking.

Louis P. Batson Co., P. O. Box 772, Greenville, S. C.

Do you want more data? Write ◂ supplier or use card on page 167; list L-122

Warp sizing starch solves stream pollution problem

A warp sizing starch with two-thirds less biochemical oxygen demand (B. O. D.) than ordinary starch and nearly twice the effective weaving protection is marketed under the brand name "Oxytrol."

The possibility of stream pollution in disposal of water used in the desizing process is brought under control when this chemically modified starch is used, without holding ponds, waste treatment systems, high disposal dilution, and other costly measures. Also, greater weaving protection, pound for pound, is provided. In mill trial runs, cotton warp sizes made with Oxytrol starch at 5 to 7 per cent solids equalled performance of warp sizes in the 10 to 12 per cent solids range made with ordinary starch sizes.

A free-flowing, cold water swelling starch, this new starch can be used over a wide temperature range, from room temperature to boiling. It is mildly alkaline, and desizes easily.

A. E. Staley Mfg. Co., Decatur, Ill.

Do you want more data? Write ◂ supplier or use card on page 167; list L-123

Men who think BIG

choose the WHITIN COMMODORE® Twister

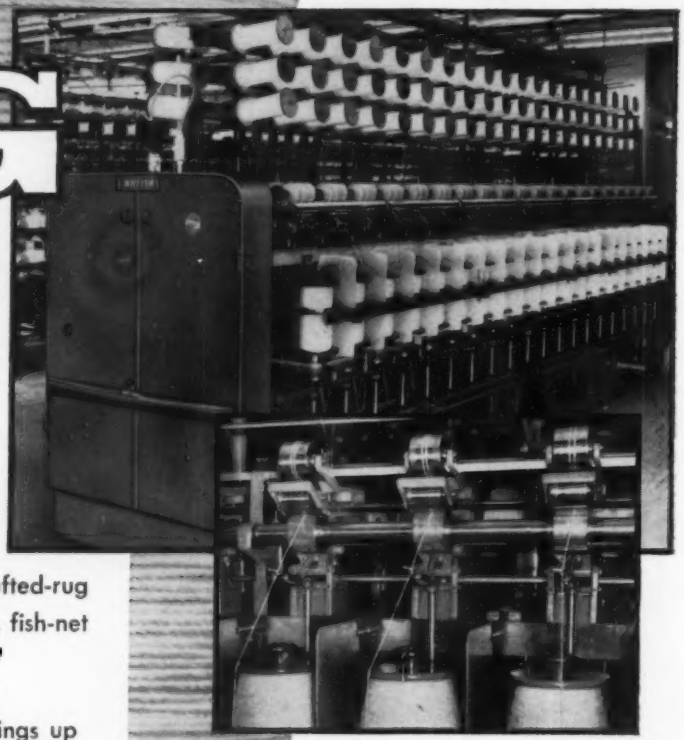
The COMMODORE is designed to do just one job — heavy-duty, coarse yarn twisting, and to do it more *profitably* for you.

The COMMODORE is ideal for twisting a wide variety of plied, heavy and coarse yarns such as tufted-rug yarns, carpet yarns, duck, tire cord, fish-net cord and paper.

* * * * * * * * *

With a 12" traverse and giant rings up to 8½" in diameter set in heavy steel ring rails, it is capable of processing yarns as coarse as 45,000 denier on packages holding as much as 11.0 lbs. of yarn. The COMMODORE has a rugged, solidly-built frame — a frame that can carry its tremendous loads without flinching. It is liberally equipped with anti-friction bearings, has precision-cut gearing and a sturdy pulley-type tape drive. Extra heavy ball bearing spindles mounted in cast iron spindle rails easily rotate these heavy packages at speeds reaching 4000 R.P.M.

A Big Twister to do a Big job — with all the advantages of **big, Big, BIG** packages.



Of particular interest to woolen yarn and carpet mills is the famous Whitin selective-type trap motion. It is available as optional equipment and can accommodate up to 6 ends. Proven on scores of installations, it has established an industry-wide reputation for efficient, positive and trouble-free operation.

WHITIN

Write Today for Descriptive Folder

WHITIN MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

New finishes and chemicals

A cationic softener that may be applied to yarns in the package dyeing machine and to all natural and synthetic fabrics is known as "Aquazine-100." For use in napping, knitting, and wash-and-wear finishing, the product softens without lowering tensile strength, is non-yellowing, will not retain chlorine, intensifies colors, and can be applied with optical whiteners from the same bath. Produced and marketed under license from W. R. Grace & Co., the hydrazinium compound is available from

Moretex Chemical Products, Inc., P. O. Box 2528, Spartanburg, S. C.

Do you want more data? Write supplier or use card on page 167; list L-201

A dyeing assistant for use with polyester, triacetate, and acetate fibers provides brighter, heavier shades in a wider, more attractive range of useful colors. Known as Cyanatex Dyeing Assistant EM, the carrier is supplied as a readily dilutable emulsion. It accelerates penetration of dye into the fiber at below-the-boil temperatures; shorter dyeing cycles, lower dyeing temperatures, and better color values are the results. A strong, alkaline afterscour is not required with this product. Wet fastness and fastness to wet and dry pressing of dyeings are good.

American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y.

Do you want more data? Write supplier or use card on page 167; list L-202

Outstanding sewability for fabrics may be obtained by using "Proxocream," a new softener, lubricant, and antistatic agent. Available as a concentrated white paste, the product is nonionic in character, offers excellent scorch resistance, is non-chlorine retentive, and does not affect dye shades or fading rate.

The Procter & Gamble Co., Cincinnati 1, Ohio.

Do you want more data? Write supplier or use card on page 167; list L-203

For leveling and stripping of dyestuffs Devlex 130, a nonionic polymer, is available. The product is capable of accepting soluble anionic and cationic dyes in the bath in competition with the textile fiber. Polymer concentration will dictate whether partial or total hold off of the stripped dyes ensues. With levels of Devlex 130 encountered in stripping or shade reduction baths, the stripping equilibrium is shifted greatly in favor of stripping. Multiple strippings of hard-to-strip vat dyes on cotton have resulted in essentially uncolored goods.

The Dow Chemical Co., Chemicals Section, Midland, Mich.

Do you want more data? Write supplier or use card on page 167; list L-204

An effective antistatic agent for all synthetic fabrics is the hydrazinium compound known as "Aquazine-88" which may be used in conventional wet processing equipment and materials.

Moretex Chemical Products, Inc., P. O. Box 2528, Spartanburg, S. C.

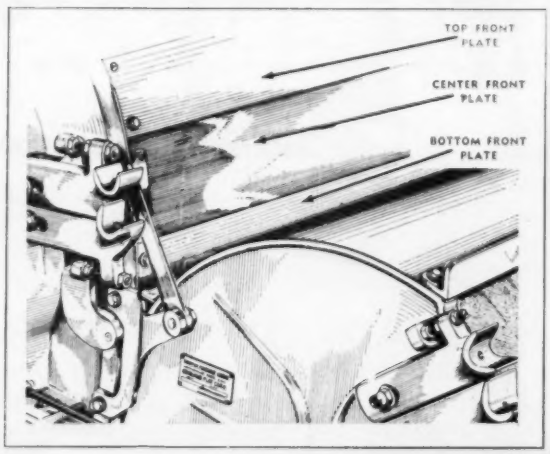
Do you want more data? Write supplier or use card on page 167; list L-205

An oil-in-water printing system designated as "Ultra Lumatex" incorporates all necessary resins in the pigment emulsion to provide simplicity of operations and better fastness, particularly fastness of crocking and dry cleaning. Because of the good printing properties, greater yield is possible.

Putnam Chemical Corp., Beacon, N. Y.

Do you want more data? Write supplier or use card on page 167; list L-206

CARD PLATES-



PRECISION MADE OF QUALITY ROLLED STEEL GROUND and POLISHED

Smooth, close setting CARD PLATES are necessary for good carding. ALL CARD PLATES should be checked periodically for smoothness and straightness. Rough plates are ineffective and costly in the Carding operation.

JENKINS manufactures CARD PLATES — standard or special — for all makes and sizes of cards. Ground and Polished — inside and outside. Straight and true to close tolerances.

Why not talk to a JENKINS METAL SHOPS representative about it? They are SPECIALISTS in Textile Metal Products.

SINCE 1912 JENKINS METAL SHOPS INCORPORATED ENGINEERED PRODUCTS

JENKINS METAL SHOPS, Inc.

P. O. BOX 1160

GASTONIA, NORTH CAROLINA

let's talk about...

Laurel Emulsions

. . . first in conditioning and lubrication of both natural and synthetic yarns.

One of these—or another—Laurel Emulsion for natural and synthetic yarns will do a better job, with less work, at lower cost. There's one best emulsion in the Laurel Line to condition and lubricate any yarn . . . better.

LAUREL RUXITE A

. . . a quality lubricating and conditioning agent for cotton, wool, and synthetic spun yarns. Adaptable to rayon novelty yarns, it improves softness and running qualities. Forms highly stable emulsions with water.

LAUREL HYDROWAX HC

. . . especially prepared for tufting yarn producers. Restores rayon, cotton, or blended yarns to proper condition and imparts lubrication for better-running yarns. Easy to apply evenly, it's completely saponifiable for protection in scouring and dyeing.

LAUREL HYDROCOP and 3B SOFTENER

. . . first choice of knitting yarn manufacturers. Gives smooth running and even stitches, making for stronger yarn with fewer breaks. Causes no odor or color changes; easy to prepare; for natural or synthetic yarns.

LAURELWAX EMULSION WG

. . . truly cold water dispersible and excellent for winding trough work. For treating cotton, wool, Orlon and other knitting and sewing yarns, it is used at no sacrifice in active content where hot water is a problem.

Laurel Brand — OVER 50 YEARS OF SERVICE TO INDUSTRY

Laurel

SOAP MANUFACTURING CO., INC.

TIOGA, THOMPSON & ALMOND STS. • PHILA. 34, PA.

Warehouses: Paterson, N.J. Chattanooga, Tenn. Charlotte, N.C. Greenville, S.C.

Little sliver weight variation on this gill box

Variation of sliver weight is held to the minimum on the Sant' Andrea Model SD/n high-speed intersecting gill box by the automatic evenness regulator with which this machine is equipped. (Existing Model SD gill boxes may also be equipped with this evenness regulator which is known as the ATL self-regulator.) A weight variation range of 35 per cent (from — 20 per cent to + 15 per cent) is corrected by the machine.

Ernest L. Frankl Associates, 515 Madison Ave., New York 22, N. Y.

Do you want more data? Write ◂ or use card on page 167; list L-101

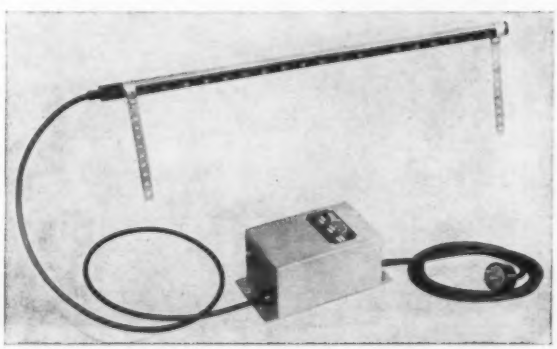
pH recorder requires no current amplification

The Dynalog pH recorder requires no amplification of current from the electrodes, which offers a substantial saving in investment and makes possible a wider mill usage of pH recording. Except for the direct measurement feature, the instrument is a standard pH recorder, and has an unlimited range adjustment for all spans over pH 3.

The Foxboro Co., Foxboro, Mass.

Do you want more data? Write ◂ or use card on page 167; list L-102

Shockless type static eliminator



Reduced waste, improved quality, and increased production are advantages to be derived by using a new shockless type static eliminator for removing static electricity from textiles during processing.

Designated the "Statomatic" Model B1 Static Eliminator (Shockless Type), it provides a field of ionized air (positive and negative charges) through which the ma-

terial passes and spontaneously selects from this ionized air a charge of the kind and quantity required to neutralize itself.

The Portland Co., 58 Fore St., Portland, Maine.

Do you want more data? Write ◂ or use card on page 167; list L-103

Winder lets knitting yarns relax

The Mettler "hank-to-can" winder for knitting yarns unwinds the yarn from hanks or skeins into a can, thus relaxing it to such an extent that the balls or centerless sausages to be wound will appear soft and voluminous.

Cosa Corp., 405 Lexington Ave., New York 17, N. Y.

Do you want more data? Write ◂ or use card on page 167; list L-104

Air spinning frame triples worsted production

The Mitsubishi pot-type air spinning frame presents a possible three-fold increase in worsted spinning production without an increase in floor space. It requires little operative attention, breaks very few ends, and produces soft and full yarns with unusual elasticity. One choice of drafting elements permits woolen drafts of 60 to 100 (synthetics 100 to 150). Because of the pot weights and their very high speeds (up to 19,000 rpm), power consumption is approximately 2.5 times the conventional.

The drafting element discharges sliver into an air-charged inhaling tube that imparts tentative twist. The yarn thus formed passes through other tube sections into the spinning pot where centrifugal force traps it against the pot wall to insert final twist. At a predetermined point the speed slows, drafting ceases, and the bobbins lower into the pots to pick up the ends and backwind them onto the bobbins. In about one minute of winding, the bobbins empty the pots and are lifted clear and tilted for doffing. Made by Mitsubishi Precision Machine Works, Japan, the machines are sold in the United States by

Mitsubishi Shipbuilding and Engineering Co., Ltd., 120 Broadway, New York 5, N. Y.

Do you want more data? Write ◂ or use card on page 167; list L-105

Use vacuum system to clean picker room filter bags

A filter bag cleaning attachment for Abington vacuum stripping systems is available for use in mills with the Saco-Lowell filter equipment for recirculating air in the picker room. Featuring push-button operation, the bag cleaner eliminates the "brushing down" operation and provides extra good cleaning as the air movement flutters the bag for more complete dust removal. Bag is simply inserted in the cleaner, button pressed to divert suction from supply line through cleaner, door closed. Cleaning continues until release button is pressed.

Abington Textile Machinery Works, 200 Wales St., Abington, Mass.

Do you want more data? Write ◂ or use card on page 167; list L-106

SUPERIOR NORTH RESEARCH

BRINGS YOU THESE IMPROVED PRODUCTS

TRY WEAVE-WELL 740— an excellent product for use with new type starch converters—Easy to pump—Gives excellent results on the hardest weaves.

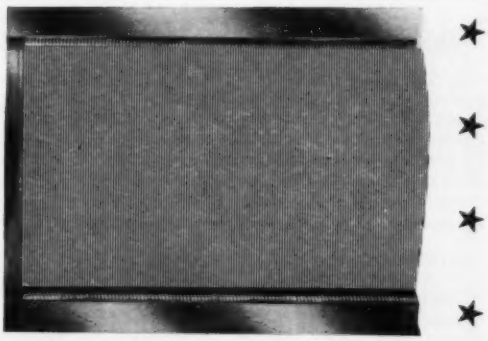
SYN-SIZE and SYN-BIND have gained rapid acceptance—Superior size for spun dacron and cotton blends.

FULL LINE OF WEAVE-WELL PRODUCTS.

FRANK G. NORTH

INCORPORATED

P.O. BOX 10573 **ATLANTA, GA.**



BRAND NEW!

PIONEER'S

DURAFLEX REEDS

FOR HIGH QUALITY CLOTH

Pioneer's new "Duraflex" construction reeds produce much better quality cloth than all metal reeds for two reasons: 1. There is no distortion in the dent wires; 2. There is no dent breakage.

Request a demonstration of this remarkable new development today!

PIONEER

HEDDLE AND REED COMPANY

P. O. BOX 10586 **ATLANTA, GA.**

IT'S FIRST! — IN SKEWED WEFT CORRECTION!

Mount Hope Automatic SKEW LINER

The choice of *PROFIT-WISE* management!

Mill executives know that profits depend upon low-cost, trouble-free production — particularly the elimination of skewed weft problems. Leading mills have tested the Mount Hope SKEW LINER, with its Electro-Mechanical Detection System, and have found it far superior for handling all weights of materials from sheers to many decorative fabrics.

The Mount Hope SKEW LINER is being used by leading Finishing plants in all textile areas. Representative plants are: —

Sayles Finishing Plants, Inc.
Sayles Bleacheries Division
Saylesville, Rhode Island

Riegel Textile Corporation
Ware Shoals Division
Ware Shoals, South Carolina

Cranston Print Works, Inc.
Cranston, Rhode Island

Waumbec Dyeing & Finishing Co.
Manchester, New Hampshire

Sayles Biltmore Bleacheries, Inc.
Biltmore, North Carolina

Waldrich Company
Delawanna, New Jersey

Southern Bleachery & Print Works, Inc.
Taylors, South Carolina

Burlington House Fabrics Finishing Co.
Burlington, North Carolina

— and many others.

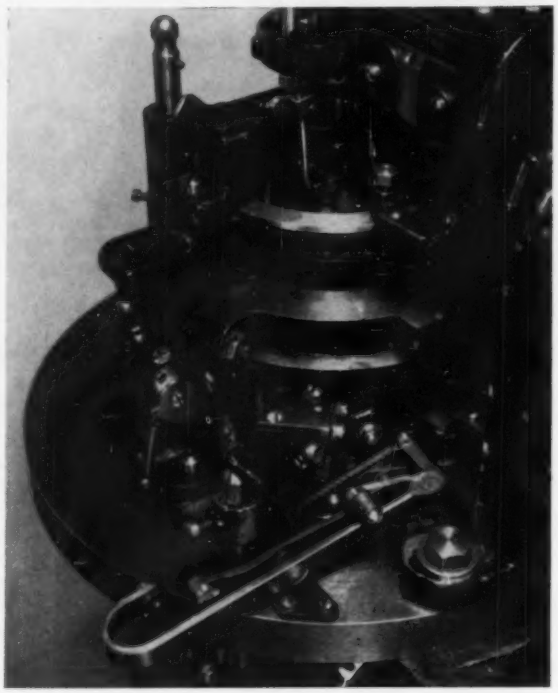
Their experience with this modern, sensitive, truly-automatic detection system suggests that you write *today* for literature giving FACTS and PROOF that it can cut your costs.

STEP UP! — TO POSITIVE SKEWED WEFT ELIMINATION!

For full information write for Bulletin #*A.S.L.* or better still why not talk it over with a Mount Hope Engineer.

Mount Hope MOUNT HOPE MACHINE COMPANY, INC.
52 FIFTH STREET • TAUNTON, MASS.
PLANTS AT
TAUNTON, MASS., CHARLOTTE, N.C., U.S.A. and DARTFORD, KENT, ENGLAND
WORLD WIDE DISTRIBUTOR
MOUNT HOPE MACHINERY S.A. • LAUSANNE, SWITZERLAND

Lets older seamless machines knit mesh



The Toone chevron mesh attachment for seamless (ladies) hosiery machines adds versatility to older types of circular knit machines that previously could not produce a mesh stocking. Regardless of the number of needles involved, most older machines with a 3½" or 3¾" short cylinder will receive it. Specifically, it can be fitted to Scott & Williams B5 and K machines and also to Maxims. Its use permits micro-mesh types of hose to be made without a reduction in speed, and the chevron effects can be varied to meet customers' requirements: 3/1; 5/2; and 6/1 selections.

Roy D. Faigenbaum, 7420 Mountain Ave., Melrose Park, Philadelphia 26, Pa.

Do you want more data? Write ◂ or use card on page 167; list L-107

Keeps drawing sliver weight correct

An automatic feed-back control, called the "Ever-Even," for cotton and worsted-type drawing frames measures, integrates, and uses the results so obtained from each delivery to change the draft enough to bring sliver weight back within preset limits. It also, for each head, makes a chart of drawing evenness, the number of stops, and the duration of each stop. The apparatus virtually eliminates long-term variation, substantially reduces short-term variation, and completely eliminates drawing draft gear changing.

The sliver evenness is detected at each calender trumpet by air micrometer principle, which operates without atmospheric influence, and this information is fed to an integrator with moving average transformation. When statistical limits are exceeded, servo-motors change the drawing-frame draft ratio instantaneously and without overcorrection or hunting effects.

Edward S. Rudnick, Representatives, Olympia Bldg., New Bedford, Mass.

Do you want more data? Write ◂ or use card on page 167; list L-108

"Zero napping point" automatically located

Tomlinson's Model 36/AZ Auto-Zero double acting napper is applicable to a wide range of woven and knitted fabrics. It features automatic location of the point of practical zero napping; and, when fitted with the Shirley Napping Action Indicator, gives exact measurement of the power absorbed by the pile and counterpile rolls. These elements make it possible to determine exactly the amount of napping energy applied to the cloth, and so to duplicate any previous napping condition. All driving mechanisms are brought together at a central point, separate from the main frame structure. Cloth speed is infinitely variable.

Atkinson, Haserick & Co., Inc., P. O. Box 509, Framingham, Mass.

Do you want more data? Write ◂ or use card on page 167; list L-109

Versatile, high speed can coiler for Pin Drafters

A can coiler unit, designed to accommodate 18", 20" or 24" cans, up to 42" in height, is available for application to Pin Drafter intersecting draw frames. Of the pusher type, the coiler will handle sliver weights ranging from 50 to 1050 gr/yd, traveling at 500 ft/min.

Drive for the coiler rotor and turntable is a combination chain and gear train, with variations in speed and direction of turntable rotation obtained easily by substituting different change-gear combinations. The coiler support and turntable base of the free-standing unit are designed so that multiple groups can be set up by mounting single units side by side. Anti-friction bearings are used throughout.

The Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

Do you want more data? Write ◂ or use card on page 167; list L-110

Use vacuum system to clean metallic-clothed cards

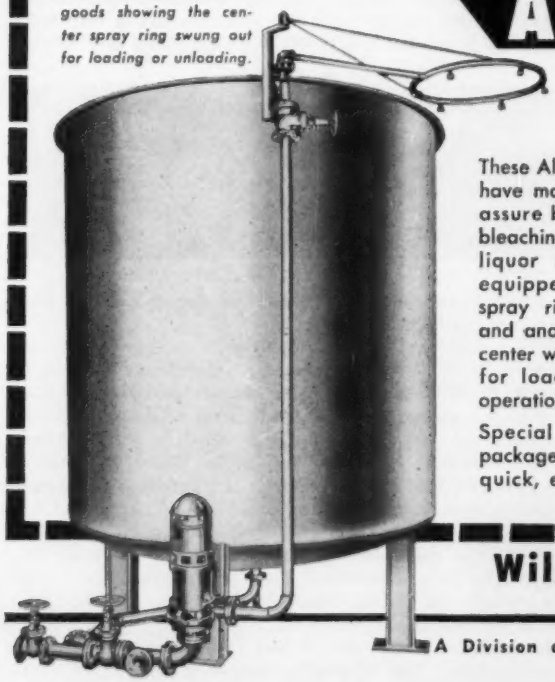
Developed especially for use in cotton system mills with Abington vacuum stripping systems and metallic clothing on cards is a cleaning downtake attachment for the vacuum line which makes vacuum cleaning of the cards possible. A flexible metallic hose with a cleaning nozzle may be quickly inserted into the downtake attachment for cleaning card sides, etc.

Abington Textile Machinery Works, 200 Wales St., Abington, Mass.

Do you want more data? Write ◂ or use card on page 167; list L-111

Especially Designed for Bleaching **KNIT GOODS**

The Allen Kier for knit goods showing the center spray ring swung out for loading or unloading.



ALLEN Stainless Steel KIERS

These Allen stainless steel kiers have many advantages which assure better, more efficient bleaching. For finest bleaching liquor coverage, they are equipped with a stationary spray ring on the periphery and another ring covering the center which can be swung out for loading and unloading operations.

Special prefabricated unit-package construction permits quick, easy installation and lower cost maintenance.

SPECIAL ADVANTAGES

- Lower cost non-stretch operation
- Positive temperature control
- Controlled circulation for efficient bleaching
- Smooth stainless surfaces eliminate rust, snag and rub marks — save chemicals

Write today for circulars giving complete information on this as well as "Package Design" cloth kiers and kiers for absorbent cotton or cotton batting.

William Allen Son's Company

SHREWSBURY • MASSACHUSETTS

A Division of O. G. KELLEY & COMPANY, Boston 22, Mass.

Moretex Offers 3 Excellent Napping Softeners

MOROFIN AD

An anionic dispersion of fatty esters. Produces an excellent scroop with good "cover" and high bulk in addition to sufficient lubrication for good napping properties. It is non-yellowing and completely safe for white goods and pastel shades. Eliminates the necessity for top finishing and costly drying operations.

MOROFIN 61

An anionic emulsion of completely saturated fatty esters. Gives excellent "cover" and imparts a full soft "hand". Forms no scum, will not cloud colors or discolor whites.

MORAMINE NS

A solubilized stearamide which gives a silky "hand" and produces easily napped fabrics. Greatly reduces tendency to show lay marks or bleeding if goods are temporarily left in the wet stage.

Let us send you technical bulletins and samples.

MORETEX Chemical Products, INC.

314 W. Henry St., Spartanburg, S.C.

Established 1908 Manufacturing Chemists

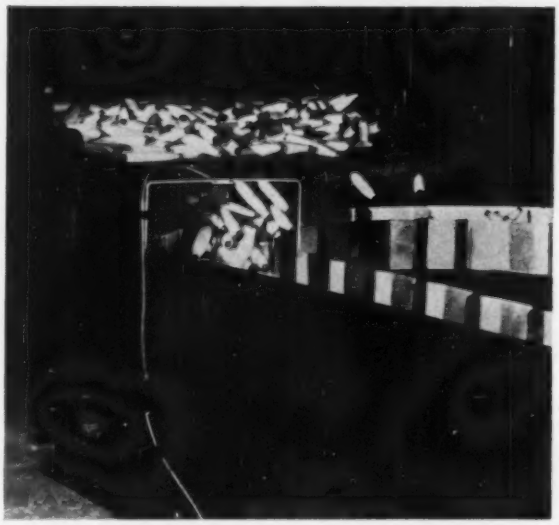
Backgrey washer eliminates intermediate drying

The Vibrotex continuous backgrey washing machine is a combination of the Vibrotex washer and the Aqua-roll water mangle. It is applicable for the continuous washing of printing machine backgreys, eliminating the intermediate drying; and for the final rinsing and squeezing when installed as the last unit in a continuous open-width washing range. Machine speeds are from 80 to 100 ypm, with a maximum working width of 70".

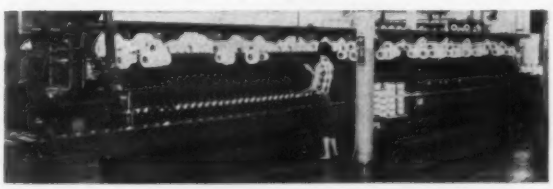
Kragmar, Inc., Paterson, N. J.

Do you want more data? Write or use card on page 167; list L-112

Spooler attachment automatically supplies yarn



An automatic bobbin dumper lift and conveyor attachment for Barber-Colman spoolers eliminates lifting of boxes of yarn by an operative and provides a constant supply of yarn for the spooler tender. Also, less space



is required for storage of yarn, and fewer bobbins are damaged or soiled.

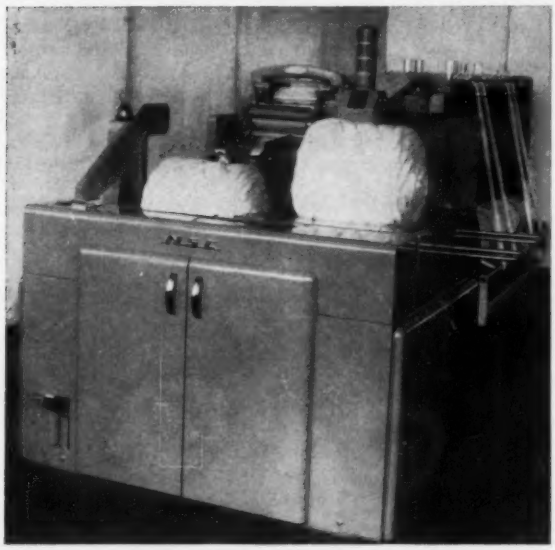
The articulated flight conveyor with moving sides that cradle the yarn is finished in aluminum paint and waxed. It runs on ball-bearing wheels mounted on the frame with stationary sides. The frame, which is painted the same color as the spooler, is attached to the machine by brackets with adjustable legs at the end of the spooler. Fabricated of 12 gauge steel, the conveyor requires a minimum amount of maintenance.

In mills where the spinning and spooling departments are not on the same floor, the attachment may be utilized by installing an overhead belt conveyor to bring the yarn to the storage bin to be fed to the spooler conveyor as needed.

Louis P. Batson Co., P. O. Box 772, Greenville, S. C.

Do you want more data? Write or use card on page 167; list L-113

High-production finisher gill has automatic doffer

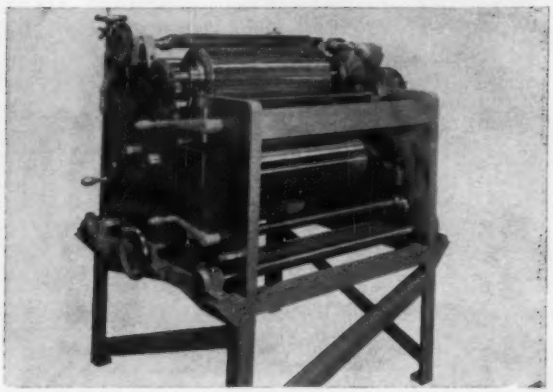


An intersecting gill box, the Schlumberger Type GNIB-RE, is equipped with a draft regulator to insure the evenness of delivered sliver at speeds up to 110 ypm. A new feature of this single-ball-delivery unit, which is normally used as a finisher in combing or recombing sets and may also be used in blending units, is that the cross-wound 18" x 16" ball is doffed automatically when a pre-set length of sliver has been delivered. Faller speed up to 1200 drops per minute is obtainable. Can or ball fed models are available.

N. Schlumberger & Cie, Guebwiller (Haut-Rhin), France.

Do you want more data? Write ◄ or use card on page 167; list L-114

Offset press for fabrics



An offset gravure press is supplied in widths to suit requirements up to 42" (repeat range is 20" to 30") for printing on rough-surface stock such as textiles and on metals, paper, etc. The unit may be used as a standard gravure press; several units can be mounted in line to

For IMPROVED and SPEEDED processing ... with REDUCED WASTE

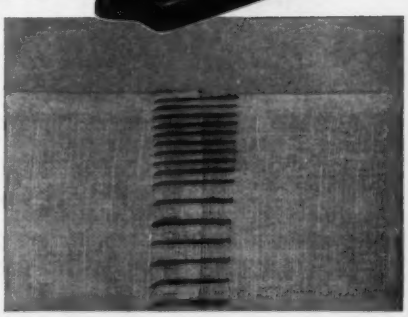
MERROW NOW OFFERS ... *IN A SINGLE MACHINE*

- ***WIDER STITCHING***

plus

- ***MULTIPLE STITCHING AT SELVAGES***

Style 60 Y3B
Butted Seamer



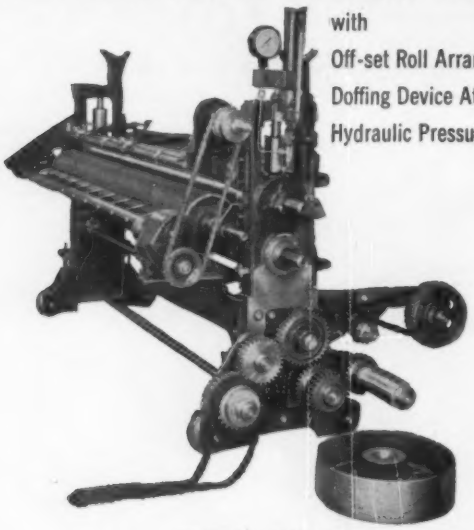
Some processors require a wide butted seam to eliminate "combing out" of coarse material under tension. Others, handling high count materials, need multiple stitching at the selvages for extra strength. Merrow now makes available a machine that fills **both** requirements.

The strong one thread seam (approximately 5/8" wide) is quickly and accurately formed by the high speed machine ... can be easily removed after processing. Result: improved processing ... higher production ... reduced waste.

Request complete information on this or other machines in the Merrow **complete line** of butted seamers.

TRADE MARK REG
The MERROW MACHINE COMPANY
2805 LAUREL ST. • HARTFORD, CONN. • U.S.A.

NEW "LIGHTWEIGHT" PERALTA® MACHINE



with
Off-set Roll Arrangement
Doffing Device Attachment
Hydraulic Pressure

Write for information.

Duesberg-Bosson of America, Inc.
Main Street Jefferson, Mass. P.O. Box 25

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EASTMAN model SMS
STATIONARY-MOUNTED
CLOTH SLITTER

- Hundreds in use. Backed by 58 years of experience in the production of cloth cutting machines.
- May be mounted singly, in pairs, or spaced as needed.
- Knife is sharpened while machine is in use.

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EASTMAN MACHINE COMPANY
BUFFALO 3, N. Y.
Phone TL 6-2200

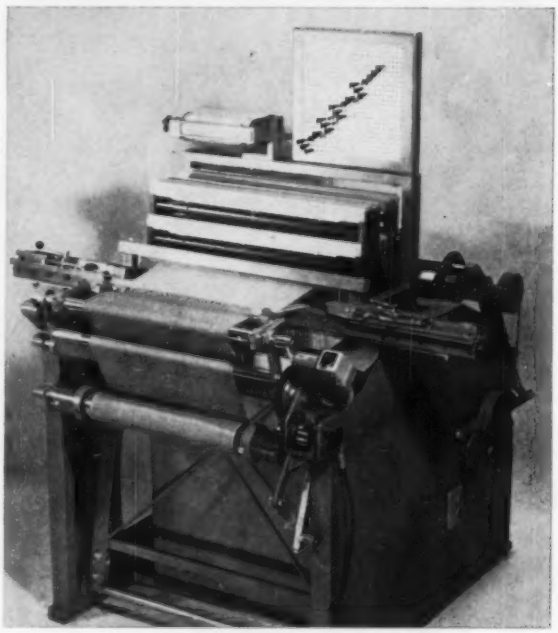
print several colors.

The unit features an eccentric throwoff mechanism between etched and offset and impress on cylinders. Roller-bearing type gibs on etched roll slide provide smooth, accurate adjustments. The doctor blade mechanism is also easily adjusted. The entire unit is fitted with antifriction bearings.

Faustel, Inc., 5109 North 125th St., Butler, Wis.

Do you want more data? Write ◂ or use card on page 167; list L-115

Sample loom's harnesses electrically operated



Hundreds of different effects may be obtained on the SWM-Sample Weaving Loom without changing the card bearing the ground weave or the draft. The harnesses of the loom are electromagnetically controlled, so the weave may be easily and quickly varied simply by changing the position of the contact pegs on a switchboard mounted on the arch of the loom.

Fabrics from 2 to 20 inches wide may be woven on the

ANTI-FRICTION
HIGH SPEED
MEADOWS TWISTERS

MEADOWS MANUFACTURING CO.
Established 1931
ATLANTA, GA. U. S. A.

loom, which is furnished with two warp beams, 24 harnesses, 2800 heddles, four shuttles, 40 bobbins, 22 yards of design card, and a hand punch for punching the design card.

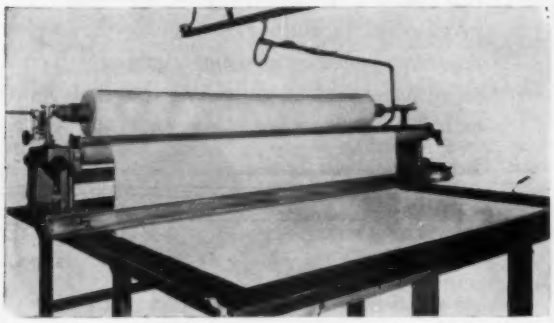
A sectional warper for use with the loom has a creel with a capacity of 35 cross wound cones or flanged bobbins, or 40 cones or pirns.

Manufactured by The Sample Weaving Machine Co., Ltd., of Liestal, Switzerland, the loom and warper are marketed in the U. S. by

Schmidt Mfg. Co., P. O. Box 560, New Bedford, Mass.

Do you want more data? Write ◆ or use card on page 167; list L-116

Cuts tricot fabrics up to 120" in width



The Model W Champion is a hand-operated machine designed for cutting tricot fabrics up to 120" in open width. It contains a positive feed that insures uniform tension throughout the entire spread, eliminating stretch and distortion, and an electric cutting knife that automatically cuts the cloth across its width—quickly and accurately. It will cut the fabric at the ends of each layer or at any point in the spread. Can be operated by one man.

Cutting Room Appliances Corp., 1134 Broadway, New York 10, N. Y.

Do you want more data? Write ◆ or use card on page 167; list L-117

Equipment briefs

High-shine, slip-retardant floor finish. Super Shur-Tred floor finish retains its high shine with only occasional touching up. The slip-retardant product may be used on all types of floors and has an extra-hard surface that resists scuffing and water spotting and which needs only infrequent buffings. Sweeping or dry mopping is usually sufficient to remove surface dirt.

S. C. Johnson & Son, Inc., 1525 Howe St., Racine, Wis.

Do you want more data? Write supplier or use card on page 167; list L-207

Nonbinding textile casters. A system of casting a step on the wheel web and fitting a thread guard to the step assures continued freedom from chokes. This is augmented by the use of a spacer washer between wheel and caster legs to dispense with "V" traps. Available in semi-steel or Lamilon, single or double ball race, swivel or rigid, and in four- or five-inch sizes.

The Fairbanks Co., 393 Lafayette St., New York 3, N. Y.

Do you want more data? Write supplier or use card on page 167; list L-208

WHITINSVILLE, MASS.
H. J. THEILER CORPORATION
SPARTANBURG, S. C.

Benninger Eng. Co., Ltd.	Sectional Warper and Beamer
Loepfe Bros., Ltd.	Optical Electronic Feeler
Ruti Machinery Works, Ltd.	Looms, Sizing Machy.
Schweiter, Ltd.	Winding Machinery
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Request complete information on the newest most flexible of all automatic filling winders, the Swiss built

SCHWEITER type MSL

We are the exclusive agents for sales and service in USA and Canada.

Write for Free Information on Johnson Textile Machinery Replacement Bearings

The ordering of maintenance material for textile machinery is simplified with this new Johnson folder which illustrates and describes a wide range of bearings for several leading makes of textile equipment.

You can order in confidence for Johnson Bearings are made to the exact specifications of the original equipment. The design of each bearing, its alloy, size-tolerances and oil grooving all are identical with the bearing to be replaced.

For your free copy of this Johnson Textile Bearing Folder JBL-9, write Johnson Bronze Company, 530 S. Mill Street, New Castle, Pa.

Johnson Bronze Company

New Castle, Pa.
West Coast Plant: Oakland 8, Calif.

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HARNESS STRAPPING

for Cotton Looms

PLUS TIME-TESTED, UNEXCELLED #316 TON-TEX ROUND

for Wool & Worsted

#57 FLAT

- New strength plies of special synthetic duck gives
  50% greater strength in thinner body
  50% greater strength at punched holes
  Equal tear resistance lengthwise and crosswise
  Low stretch factor
  No ply separation
  Extreme flexibility over small diameter rolls
- Precision punched to customer's specifications
- Reasonably priced. No extra cost

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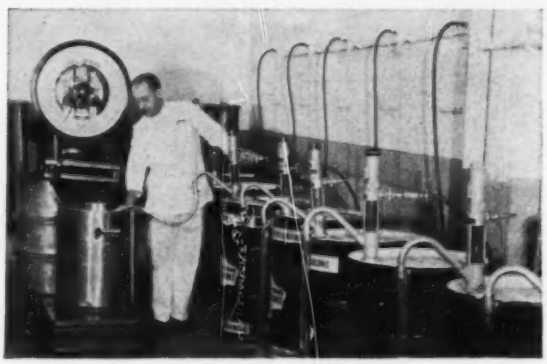
Serving Industry Over a Quarter Century



Mix and move fluids quickly ...pump direct from drum!

Graco Fast-Flo Pumps reduce handling costs. They transfer measured amounts of different fluids direct from original containers. Ideal for batching, applying or mixing . . . fluids are transferred quickly and safely. Aids good housekeeping; eliminates contamination.

Send for more information about this amazing *Graco* Fast-Flo that's suited both for large and small operations. It handles materials as thin as alcohol, as thick as cookie frostings! Fast-Flo Pumps are also available in stainless steel. Send for free idea booklet!

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Look under "SPRAYING EQUIPMENT"

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Sales Office

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More equipment briefs *(from page 161)*

Special finish protects valves. Pneumatically operated Flow-Rite valves are available in a special die chromate finish that resists corrosion. Recommended for applications in dyeing and finishing.

The Powers Regulator Co., 3400 Oakton St., Skokie, Ill.

Do you want more data? Write supplier or use card on page 167; list L-209

A plastic drop-box picker has an oil hole molded into its side and an oil wick cured into its plastic body. The oil hole serves to allow heat to escape from the picker as well as a port through which lubricant is dropped. Picker life is greatly increased and rod scoring is prevented.

Denman Textile Rubber Co., Div. McCandless Corp., 52 Vanderbilt Ave., New York 17, N. Y.

Do you want more data? Write supplier or use card on page 167; list L-210

Caster has extra wide wheel clearance. More space between large-diameter thread guards and the side members of the horn is provided on the 507-4BTG caster. Equipped with a four-inch ball-bearing semisteel wheel with 1¼" smooth face, the wheels are load rated at 175 pounds each. Itself a rigid plate unit, it has a swivel-plate companion in the 107-4BTG, and both are designed to prevent thread-choking.

Faultless Caster Corp., 1521 North Garvin, Evansville 7, Ind.

Do you want more data? Write supplier or use card on page 167; list L-211

Triple mast lift for existing trucks. The triple lift mast can be installed on any standard heavy-duty 3000- or 4000-lb capacity Baker lift truck. When lowered, the third stage upright does not increase clearance height over standard masts. Offering 38% more usable lift height with no reduction in truck capacity at normal lift height, it is available in 11 lift heights ranging from 65" to 95" in over-all nested height.

Otis Elevator Co., Baker Industrial Trucks Div., Cleveland 2, Ohio.

Do you want more data? Write supplier or use card on page 167; list L-212

Ultrasonic cleaning gets into crevices. The rapid formation and collapse of microscopic bubbles created by transmitting ultrasonic vibrations through a liquid is a powerful cleaning force that even gets crevices and inside corners clean. The equipment is available in laboratory and industrial sizes. Suggested uses include reed, heddle, and drop wire scrubbing.

National Ultrasonic Corp., 111 Montgomery Ave., Irvington 11, N. J.

Do you want more data? Write supplier or use card on page 167; list L-213

Drive helps sewing operations. The Model 14 Zero-Max drive can be adapted to a sewing machine to fold cloth into boxes precisely and can be easily changed to compensate for differences in materials. It also can be adapted to draw material away from a sewing operation at a constant tension or set up to assist sewing elastic or tucks.

Cross Sales and Engineering Co., 824 Winston St., Greensboro, N. C.

Do you want more data? Write supplier or use card on page 167; list L-214

BLEND COTTON BY DENSITY THROUGH WEIGH PANS

NOW AVAILABLE: An economical **conversion** of existing opening hoppers to weighing feeders by the addition of a scale mechanism. To be ranged with the standard sandwiching SYNCROVEYOR (control panel assembly) and plucking cylinder (The SYNCROBLENDER).

OBJECT: To improve process uniformity and efficiency throughout any Blend process by the use of this PRODUCTION INSTRUMENT.

HOW IT IS DONE: Fiber properties can vary widely. Ultimately, the basic yarn evenness requirement is to place the same number of fibers of each density (represented by the laydown) in each inch.

Therefore, consider it "fact" that stock representation per yard of picker lap is from one bale per hopper and select and laydown bales accordingly. Meter consistently predetermined increments of ounces . . of each density (fineness) designation in short term control intervals of seconds. Handle reworkable waste through 1 weigh pan.

No additional floor space, connected horsepower, or labor required for **SYNCROMATIC SYSTEM.**

U. S. Sales Agents:
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3440 Augusta Road, Greenville, S. C.

FIBER CONTROLS CORPORATION
BOX 1358 GASTONIA, NORTH CAROLINA

FREE BOOKLETS

11-1 PRECISION DYE JIG—Brochure describes advantages and gives complete specifications for Type VH-Super Dye Jig. Edda International Corporation, 468 Fourth Avenue, New York 16, New York.

11-2 PLASTIC CORE LEATHER BELTING—Booklet describes new non-stretch plastic core leather surface belt known as "Tanastic". J. E. Rhoads & Sons, 2100 West Eleventh Street, Wilmington 99, Delaware.

11-3 AJUSTO-SPEDE DRIVES—Booklet includes rating table, dimensions, and performance characteristics of motors from three to one hundred horsepower. The Louis Allis Company, Milwaukee 1, Wisconsin.

11-4 MAGNEDRAFT SPINNING—Folder contains complete details on MagneDraft Spinning, including pictures and drawings. Saco-Lowell Textile Machinery Division, Easley, South Carolina.

11-5 STACKER CRANE—Bulletin illustrates and describes various applications of stacker cranes in warehousing. American MonoRail Company, 1111 East 200th Street, Cleveland 17, Ohio.

11-6 COMPOSITE DUST CONTROL—Bulletin discusses dry centrifugals, wet collectors, fabric collectors and electrostatic precipitators. Bulletin No. 271, Department PD, American Air Filter Company, Inc., 215 Central Avenue, Louisville 8, Kentucky.

11-7 ELECTROMAGNETIC DRIVES—Booklet describes application of MagnaFlow Electromagnetic Drives for conveyors, fans and pumps, winders and anywhere the need for speed control exists. Booklet B-7875, Westinghouse Electric Corporation, Box 2278, Pittsburgh 30, Pennsylvania.

11-8 IMPROVED PRINTING—Improved methods of preparing textile printing colors through the use of modern techniques are discussed in bulletin 32-1960. Morehouse-Cowles, Inc., 1150 San Fernando Road, Los Angeles 65, California.

11-9 MANUAL MOTOR STARTERS—Bulletin describes manual motor starter for fractional-horsepower motors and for integral horsepower motors up to 7½ horsepower. Bulletin GEA-6358C, General Electric Company, Schenectady 5, New York.

11-10 SPEED REDUCERS—Booklet describes completely redesigned and expanded line of parallel shaft speed reducers in 57 sizes. Booklet 2719, Link-Belt Company, Department PR, Prudential Plaza, Chicago 1, Illinois.

11-11 PROFITABLE LIGHTING—Booklet establishes that better lighting means increased production, reduced costs, fewer accidents, fewer rejects, etc. Inquiry Bureau (EH-60), General Electric Company, Nela Park, Cleveland 12, Ohio.

11-12 SLIP COAT—Bulletin describes extremely slick, waxy fluorocarbon which has many uses as a lubricant and release agent. It is clean at the time of application and remains clean and dry during use. Livingstone Coating Corporation, P. O. Box 8282, Charlotte 8, North Carolina.

11-13 POLYDYNE DRIVES—Bulletin describes the new ¼ to 25 horsepower line of Polydyne mechanical adjustable speed drives. Request Bulletin GEA-6806, General Electric Company, Schenectady 5, New York.

11-14 DOW LATEX—Brochure lists all Dow latexes, their properties and typical areas of use. Plastics Sales Department, The Dow Chemical Company, Midland, Michigan.

11-15 MEEHANITE—Booklet describes bushings, gear blanks and bar stock made from Meehanite, which "bridges the gap between iron and steel". Ross-Meehan Foundries, 1601 Carter Street, Chattanooga, Tennessee.

11-16 V-BELT DRIVES—Brochure describes the advantages of "DynaV" Drives, including construction features, drive selection tables, allowable speeds, etc. Dodge Manufacturing Company, Mishawaka, Indiana.

11-17 AUTOMATIC STOP MOTION—Brochure gives complete details on single-end, single-spindle, completely automatic stop motion with great simplicity of operation. Meadows Manufacturing Company, P. O. Box 10997, Atlanta 10, Ga.

11-18 HIGH SPEED WARPER—Brochure describes high speed warper for cotton, rayon, woolen and worsted, and synthetics. Allen Company, Inc., P. O. Box 98, Acushnet Station, New Bedford, Mass.

11-19 CLEANING GUN—Pamphlet gives details on cleaning gun for soil and spot removal on finished or greige goods. Charles S. Tanner Company, P. O. Box 2115, Greenville, S. C.

11-20 PRECISION BALANCES—Bulletin describes small capacity industrial weighing balances of simple construction. Exact Weight Scale Company, 541 East Towne Street, Columbus, 15 Ohio.

11-21 TEXTILE LEATHERS—Catalog contains information and specifications on various types of textile leathers, and includes horsepower rating table for belts. Charles Bond Company, 617-623 Arch Street, Philadelphia 6, Pa.

New fully transistorized LINDLY Series 1000 *Ultra* Yarn Inspector

Typical Ultra Yarn Inspector Installation: detecting head mounted on floor stands, transistorized control unit attached to leg.

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Controls: Fully transistorized circuitry achieves maximum stability and automatic sensitivity control — longer component life, less maintenance, simplicity in servicing, greater compactness, less power consumption. Choice of single level, dual level, and dual level with length selector.

Detecting Head: New optical system makes possible better electronic performance, eliminates need for light deflector cover, improves uniformity of sensitivity across width of the yarn sheet — has special new lamp with simpler alignment adjustments, completely cylindrical and longer yarn gauging surfaces, smooth finish resistant to accumulation of lint and dust.

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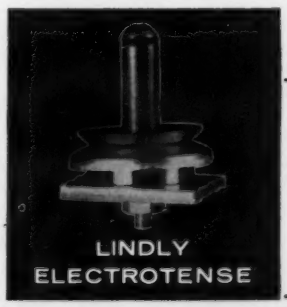

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BOOKLETS

raw stock to roving

T-101 LUMMUS PEPPER - SHAKER OPENER. Gives complete details and photographs. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

T-102 STATIC ELIMINATION. How to eliminate static safely and inexpensively. Simco Co., 920 Walnut St., Lansdale, Pa.

T-103 CARD GRINDING INFORMATION. Care and operation of cards. B. S. Roy & Son Co., Worcester, Mass.

T-105 VERSA - MATIC DRAWING FRAME. Describes drafting elements, quality of sliver, roving and yarn possible. Saco-Lowell Shops, Textile Machinery Div., Easley, S. C.

T-106 SARGENT OPENER. Describes opener with rotary evener and stripper. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-107 FEATHERTOUCH DRAFTING. How to get "highest production per frame at lowest cost." Ideal Industries, Inc., Bessemer City, N. C.

T-111 MAGNETIC IDEAS. Booklet shows uses of permanent magnetic separation equipment in opening room as well as throughout mill. Removes tramp iron, prevents fires. Eriez Mfg. Co., Erie, Pa.

T-112 ADVANTAGES OF ALDRICH PICKERS. Good technical text, comprehensive pictures. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

T-113 NEW CONDENSER TAPE. Describes Supr-O-Tape, an impregnated fabric condenser tape. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

T-119 FIBER METER. Automatic weighing and blending assures quality, holds variation to 1%. James Hunter, Inc., P. O. Box 298, Mauldin, S. C.

T-120 PIN DRAFTERS. Textile job report No. 21 tells how Warner & Swasey Pin Drafters help modify jute systems for carpet yarns. Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

T-121 UNIVERSAL CARD COILER. Literature describes both head and base swivel for adjustment. Includes data on 90-day free trial. McDonough Power Equipment, Inc., McDonough, Ga.

T-122 RECONDITION OPENING & CLEANING. Bulletin gives whys and wherefores of reconditioning your opening and cleaning lines. Special attention given to each machine with suggestions as to parts replacement. Saco-Lowell Shops, Replacement Parts Div., Box 327, Greenville, S. C.

T-123 COILER CONVERSIONS. Full facts on low initial cost conversion to larger coiler cans. Lists advantages, has complete description. Southern States Equipment Corp., Hampton, Ga.

T-124 CARD DRIVE. Bulletin 301-a describes simple, safe, efficient individual card drive. Southern States Equipment Corp., Hampton, Ga.

T-132 PROCTOR SUPER PICKER. Data sheet gives details of the Proctor Super Picker for use on slabs of baled cotton, or wool and synthetic blends in layers up to 12" thick. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

T-133 ANTI-STATIC AGENT. Data sheet lists basic characteristics of liquid anti-static agent which eliminates processing difficulties with fibers due to static electricity. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

yarn and warp making

T-201 PRODUCTS FOR SPINNING AND WEAVING. Complete line, applications, advantages shown. Dayco Corp., Textile Div., Dayton, Ohio.

T-202 NEW BOBBIN MANUAL. Complete bobbin guide. Lestershire Spool Division, National Vulcanized Fibre Co., Wilmington 99, Delaware.

T-203 SPINDLE OIL. "Gulfspin" insures against excessive wear and eliminates spindle wobble. Gulf Oil Corp., Gulf Bldg., Pittsburgh, Pa.

T-205 HIGH SPEED AUTOMATIC QUILLER. Lists advantages and dimensions of "Autocopser." Terrell Machine Co., Inc., P. O. Box 928, Charlotte, N. C.

T-208 PACKAGED SPINNING MODERNIZATION. Details on Collecto-Vac, Open-Aire Creels, Cross-Jet Cleaner, Air Conditioning. Bahnson Company, Winston-Salem, N. C.

T-209 SECTIONAL WARPER. Describes full width and sectional warpers for knitting, weaving. Robert Reiner, Inc., Weehawken, New Jersey.

T-210 CONICAL RINGS AND FLYERS. Complete details and specifications. Herr Manufacturing Co., Inc., 318 Franklin St., Buffalo 2, New York.

T-211 PRECISE WINDING MACHINE. For winding pineapple or straight cones and tubes of synthetics. Foster Machine Co., Westfield, Mass.

T-212 AUTOMATIC CLEANING EQUIPMENT. Working details and advantages of the Tri-Rail Cleaner. American MonoRail Co., 111 East 200th St., Cleveland 17, Ohio.

T-216 SPINNING FRAME CONVERSIONS. Big-package, new-frame results at half the cost. Meadows Mfg. Co., P. O. Box 10876, Station A, Atlanta, Ga.

T-217 COLLECTO-VAC. New development collects lint, fly and broken ends. The Bahnson Company, Winston-Salem, N. C.

T-219 SPINNING AND TWISTER RINGS. Complete details, pictures, price list. Whitinsville Spinning Ring Co., Whitinsville, Mass.

T-222 SUCTION CLEANING SYSTEM. Details on new Collector Unit Model C-4. Pneumafil Corp., Charlotte 8, N. C.

T-223 FACTS ABOUT YOUR FLYERS AND SPINDLES. Advantages of smooth flyer and spindle operation. Ideal Machine Shops, Bessemer City, N. C.

T-225 LAPLESS ENDLESS SPINNER. Full information available. Ton-Tex Corporation, 31 Columbus Ave., Englewood, N. J.

T-227 SPINDLE OILING MACHINE. Features and advantages noted. Wicaco Machine Corp., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

T-228 HANDY SPINNING REFERENCE. Shows traveler speeds, sizes of ring flanges. Saco-Lowell Shops, Parts Replacement Division, P. O. Box 327, Greenville, South Carolina.

T-229 UNIRAIL UPTWISTER. Higher yarn quality and better packages at faster speeds. Leesona Corp., P. O. Box 1605, Providence, R. I.

T-230 PRECISION TEXTILE WINDING. Tensions and density control for winding rubber cones. Kidde Textile Machinery Corp., Farrand St., Bloomfield, N. J.

T-231 CONE WINDER. Describes Model 102 winder, including applications. Foster Machine Co., Westfield, Mass.

T-232 SHORT CUT TO STAPLE FIBER SPINNING. Ten steps in operation of the Tow Stapler. Turbo Machine Co., Lansdale, Pa.

T-233 WEAVER'S KNOTTER. Instructions as to use, description. A. B. Carter, Inc., Gastonia, N. C.

T-234 TEXTILE ROLL COVERINGS. Describes complete line as well as other mill supplies. Armstrong Cork Co., Industrial Div., Lancaster, Pa.

T-239 LARGE PACKAGE TWISTER. Information on new anti-friction Jumbo Twister which carries a 14" bobbin with a 12" build. Meadows Mfg. Co., P. O. Box 10876, Sta. A, Atlanta, Ga.

T-241 PACEMAKER TWISTERS. Folder gives details on high production, outlines notable features. Whitin Machine Works, Whitinsville, Mass.

T-242 RING SPINNING FRAME. Folder presents description, illustrations and specifications of up-to-date Simplex ring spinning frames. Davis & Furber Machine Co., North Andover, Mass.

T-243 ANTI-FRICTION TWISTER BEARINGS. Find out how bearings helped make The Meadows Twister almost friction-free. Fafnir Bearing Company, New Britain, Conn.

T-246 BETTER BEAMS. Information on three ways to make better beams. Kidde Textile Machinery Corp., Farrand St., Bloomfield, N. J.

T-249 VARI-SPEED MOTOR PULLEY. Describes variable speed control through use of simplified three-major-part disc-assemblies with only one lubrication point. Reeves Pulley Co., Reliance Electric & Engineering Co., Columbus, Ind.

T-250 SPINNING MODERNIZATION. Booklet shows how lower costs and improved quality are obtained by spinning modernization. Roberts Company, Sanford, N. C.

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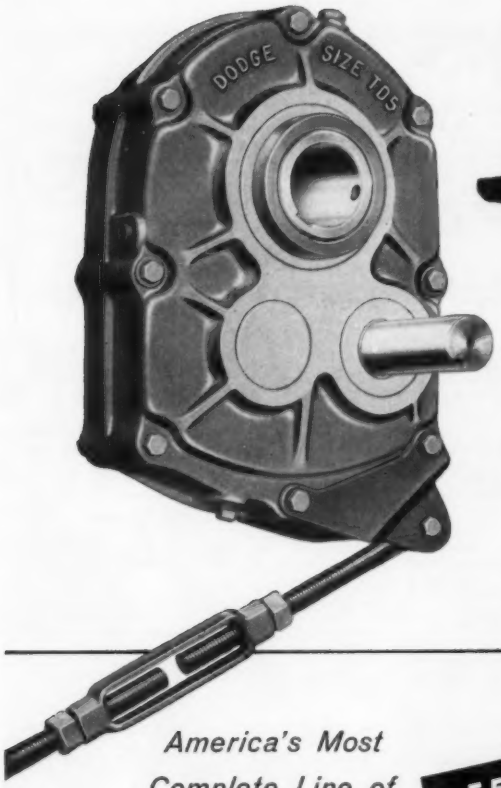

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BOOKLETS

T-255 NEW BOBBIN HOLDER. Details on streamlined, positive latching bobbin holder. Whitehead Die Casting Co., 1140 Zonolite Rd., Atlanta, Ga.

T-256 HUMIDIFIER PROTECTION — Brochure tells how "Rustex" can stop rust and corrosion and prevent discolored water in your humidifying system. Odorless and completely harmless to personnel, or goods. Anderson Chemical Co., Inc., Box 1424, Macon, Georgia.

T-257 COMETSA SPINDLES. Bulletin gives details of high-precision, vibration free Cometsa spindles. Edward B. Rock, 127 E. 69th Street, New York 21, New York.

slashing—weaving—tufting

T-301 COUNTING AND MEASURING DEVICES. Wide range of counting devices for all types of textile machinery. Veeder-Root, Inc., Hartford, Conn.

T-302 LOOM SUPPLIES. Describes complete line. E. H. Jacobs Mfg. Co., P. O. Box 3096, Charlotte, N. C.

T-304 LOOM PRODUCTION CHARTS. Celluloid card shows yards per loom per week. Ralph E. Loper Co., Greenville, S. C.

T-306 THE STORY OF STARCHES. History and information on manufacture and use of starches. National Starch & Chemical Corp., 750 Third Ave., New York 17, N. Y.

T-308 STEEL WARP BEAMS. Beams for both broadloom and narrow fabrics. Milton Machine Works, Inc., Milton, Pa.

T-309 PENFORD GUMS IN TEXTILES. Describes their excellent properties for warp sizing spun yarns. Penick & Ford Ltd., Inc., 750 Third Ave., New York 17, New York.

T-312 AIR SLASHER DRYER. Shows construction and operating details. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

T-313 BUTT-TACKING SEWING MACHINE. Describes operation, installation of single thread butt-tacking sewing machine. The Merrow Machine Co., 28 Laurel St., Hartford, Conn.

T-314 LOOM REED BOOKLET. Describes in detail a variety of reeds. Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

T-315 COCKER EQUIPMENT. Information on warp sizer, beam warper, creels, tensions, back-winders, etc. Cocker Machine & Foundry Co., Gastonia, N. C.

T-318 FORMULAS FOR SLASHING ARNEL. Includes also information on warping, weaving and quilling. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte 1, N. C.

T-319 ECLIPSE STARCHES FOR TEXTILES. Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

T-321 COCKER SLASHERS. Complete specifications and advantages, including allied equipment. Cocker Machine & Foundry Co., Gastonia, N. C.

T-322 MOUNTS FOR LOOMS. Vinyl mount eliminates need for bolts or paste. Clark, Cutler, McDermott Co., 106 W. Central St., Franklin, Mass.

T-323 UNIFIL LOOM WINDER. Describes new concept of filling preparation which needs no quilling area. Leesona Corp., P. O. Box 1600, Providence, R. I.

T-324 ALIGNING LAYS. Setting instructions for step-by-step aligning. Draper Corporation, Hopedale, Mass.

T-325 TRAVELING LOOM CLEANER. Advantages of the new Oscillaire loom cleaner. Parks-Cramer Co., Fitchburg, Mass.

T-326 DRAPER REPAIR PARTS CATALOG. Contains illustrations covering all mechanisms and construction with complete listings. Draper Corporation, Hopedale, Mass.

T-327 BALING PRESSES. Describes complete line of motor-driven and hydraulic baling presses. Logemann Brothers Co., 3150 West Burleigh St., Milwaukee, Wis.

T-328 TEXTILE MACHINERY PARTS CATALOG. Describes complete line of Dayco and Thorobred textile parts. Dayco Corp., Dayton, Ohio.

T-329 COUNTING DEVICES. Describes complete line of counters for every application. Trumeter Company, 38 W. 32nd St., New York 1, New York.

T-331 STATIC BARS. Humorously illustrates how static can be overcome. The Simco Co., 920 Walnut St., Lansdale, Pa.

T-332 CARE OF DRAPER SHUTTLES. Describes how longer, trouble-free service may be obtained. Draper Corporation, Hopedale, Mass.

T-336 ONE-PIECE SIZING AGENT. Houghto-Size CW provides low kettle cost, results in free-running warp of high breaking strength, increasing weaving efficiency. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

T-346 FACTS ON NON-WOVENS. Fact file on non-wovens tells of new machinery, new methods of handling fibers, new bonding agents, etc. Curlator Corporation, Textile Div., E. Rochester, N. Y.

T-347 NEW DRYING SYSTEM. Describes high capacity, custom engineered drying equipment for tufted plants. Dalton Sheet Metal Co., Inc., Dalton, Ga.

T-351 AUTOMATIC STOP MOTION. Complete information available on automatic stop motion for Titan warp tying-in machine. Edda International Corp., 468 Fourth Ave., New York 16, N. Y.

T-353 BACKING FOR TUFTEDS. How to get your tufting necessities with one telephone call. Fulton Cotton Mills, P. O. Box 1726, Atlanta 1, Ga.

T-355 NON-WOVEN FABRICS. Booklet gives outline of nature and history of non-woven and the manufacturing techniques of today. Booklet 56-219A, Chemical Div., Goodyear Tire & Rubber Co., Akron 16, Ohio.

T-358 LOOM SUPPLIES. Information on rod lubricant and applicator, sponge leather bunter, picker. Garland Mfg. Co., 54 Water St., Saco, Me.

T-362 SIZE THAT SATISFIES. Information on getting the correct size package for your mill. Also on Bingham line of slasher rolls. Stodghill & Co., 716 Ponce de Leon Place, Atlanta, Georgia.

T-363 RUBBER COVERED SLASHER ROLLS. Handy booklet tells how to get longer life and better performance from rubber covered rolls. Includes data on handling, storing and grinding. Stowe-Woodward, Inc., Dept. C., 181 Oak St., Newton Upper Falls 64, Mass.

knitting

T-401 SINGLEHEAD FULL - FASHIONED MACHINE. Literature on request from the Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-403 RASCHEL KNITTER. Describes new Raschel-type knitting machine. Kidde Textile Machinery Corp., Inc., Farrand St., Bloomfield, N. J.

T-406 NEEDLE OIL DOES NOT STAIN. Details on "Gulftex 39" developed for knitting mills. Gulf Oil Corp., Gross & PRR, Pittsburg 30, Pa.

T-407 KNITTING MACHINES. Information on Wildman "TFS" 30" single section F-F machines and "AL" 30" diameter 32-feed "single purpose" circular interlock machine (rib type) Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-409 KNIT GOODS FINISHING MACHINERY. Data on calenders, shrinkers, curers, extractors, steamers. Tubular Textile Machinery Corp., 33-61 54th St., Woodside, N. Y.

T-410 "READING" TYPE 60 F-F KNITTING MACHINE. Information about the new "Reading" Type 60, 38-section automatic full-fashioned hosiery knitting machine. Write Textile Machine Works, Reading, Pa.

wet processing

T-500 WEBB GUIDE SYSTEMS. Folio No. EG-84 describes webb guide systems for cloth applications. G.P.E. CONTROLS, INC 240 E. Ontario St. Chicago 11, Ill.

T-501 TUBES FOR PACKAGE DYEING. Describes Dytex tubes for one-time use. Sonoco Products Co., Hartsville, S. C.

T-502 FINISHING MACHINERY. Text and photographs of complete line of machinery. Marshall and Williams Corp., 46 Baker St., Providence, R. I.

T-503 WATER ANALYSIS. Includes tables, conversion factors, indicators, standard solutions. Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-504 UREA FORMALDEHYDE. Literature on urea formaldehyde or U.F. concentrate-85. Dept. CUFI-29-1, Nitrogen Div., Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-506 CATIONIC SURFACE ACTIVE AGENT. Describes Uversoft "D." Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

T-507 CONTINUOUS STARCH COOKER. Booklet shows how the use of continuous cookers for starch assures accurate control, economy, low maintenance in warp sizing and finishing Clinton Corn Processing Company, Clinton, Iowa.

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BOOKLETS

T-508 PEROXIDE BLEACHING SYSTEM. Illustrates and describes this continuous system. E. I. du Pont de Nemours & Co., Electrochemical Dept., Wilmington, Del.

T-510 TEXTILE CHEMICALS. Describes leading products for wet processors. Royce Chemical Co., Carlton Hill, N. J.

T-512 DEPUMA. Describes odorless, viscous, non-evaporating emulsion for anti-foam. Koppers Co., Inc., Chemicals & Dyestuffs Div., Porter Bldg., Pittsburgh 19, Pa.

T-513 CATALYST AC-6. Tells how curing efficiency may be stepped up as much as 25%. Monsanto Chemical Co., Plastic Division, Springfield 2, Mass.

T-514 SODA ASH BULLETIN. Contains useful data covering this subject. Solvay Sales Division Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-516 ALUMINUM CHELATE PEA-1. Technical data sheet tells how aluminum Chelate PEA-1 may be used with advantage in many applications where aluminum is proplate is unsatisfactory. Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

T-517 CHEMICAL CATALOG. Lists products with chemical composition, properties and applications. Antara Chemicals Div., General Aniline & Film Corp., 435 Hudson St., New York 14, New York.

T-519 HYDRAULIC POWER UNITS. Describes unit for operating hydraulic textile machines. B. F. Perkins & Son, Inc., Holyoke, Mass.

T-522 CUT WATER TREATMENT COSTS. Describes the control of scale, slime, algae and corrosion. Oakite Products, Inc., 126C Rector St., New York 6, New York.

T-526 PRODUCTS FOR TEXTILE IMPROVEMENT. Describes products and services designed to provide better fabrics. B. F. Goodrich Chemical Co., 3135 Euclid Ave., Cleveland 15, Ohio.

T-527 SODIUM HYDROSULFITE. Literature and test samples are available on "T-C Hydro." Tennessee Corp., 617-629 Grant Bldg., Atlanta, Ga.

T-528 ETHANOLAMINES. Lists application, chemical and physical properties. Nitrogen Division, Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-531 ROTARY DYEING MACHINE. For use in dyeing hosiery, hats, gloves, socks, etc. Turbo Machine Co., Lansdale, Pa.

T-534 DYEING AND FINISHING MACHINERY. Complete line presented in series of catalogs. Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

T-535 DYEING, BLEACHING AND DRYING EQUIPMENT. Complete line for cotton, wool and synthetics described. Color pictures. Morton Machine Works, 1718 3rd Ave., Columbus, Ga.

T-536 NAPHTHOL RATIOS SLIDE CHART. Quickly and accurately enables operators to determine Naphthol Ratios. Alliance Color & Chemical Co., 33 Ave. P, Newark 5, New Jersey.

T-540 PENFORD FINISHING GUMS. Complete data, including physical properties. Penick & Ford Ltd., Inc., 750 Third Ave., New York 17, New York.

T-541 REGENERATION OF ZEOLITE WATER SOFTENERS. Explains advantages of Lixate Process. International Salt Co., Scranton, Pennsylvania.

T-542 DYEING SYNTHETIC FIBERS. Detailed analysis of methods and materials. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-543 INDUSTRIAL BRUSHES. Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

T-544 WASTE HEAT RECOVERY. Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

T-545 WASHERS FOR SCOURING, BLEACHING, ACIDIFYING. Describes high capacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-546 NAPHTHOL FOR LIGHTFAST BROWNS. Booklet describes new, straight, non-substantive naphthol. Naphthol As-BN, for the continuous naphtholation of cotton and rayon piece goods in the dyeing of economical, fast-to-light browns. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-547 SOFTENER LUBRICANT, NAPPING AID. Technical information available on softener, lubricant and napping aid for natural and synthetic fibers, yarns and fabrics. Nopco Chemical Co., Harrison, N. J.

T-548 HANDBOOK ON METHOCEL. Gives technical information and use data on family of methylecelluiose ethers called Methocel. Organic Chemicals Sales, The Dow Chemical Co., Midland, Mich.

T-550 POLYVINYL ACETATE EMULSION. Bulletin contains a description of Celanese emulsions and cites advantages of Celanese polyvinyl acetate emulsions in textile finishing. Celanese Chemical Co., 180 Madison Ave., New York 16, N. Y.

T-554 INSTRUMENT CATALOG. Complete information on industrial instrument accessories and supplies, Includes specifications, parts numbers and prices. Catalog 500, Foxboro Co., Foxboro, Mass.

T-556 HUNTER DYEING EQUIPMENT. Describes fully with diagrams Hunter Model A Dye Becks, Hunter No/Lap Reels, Model S Dye Kettles, Open Width Dye Kettles, Sample Dye Kettles. James Hunter Machine Co., North Adams, Mass.

T-557 HIGH ACTIVITY CATALYST. Technical bulletin describes new catalyst AC-6 which provides increased activity, excellent bath life, minimum odor formation, etc. Monsanto Chemical Co., Plastics Div., Springfield, Mass.

T-558 CATIONIC DYE LEVELER. Bulletin TX-34 gives new information on dye leveler for acid colors on nylon tricot and wool through use of Nopco 1423-B. Nopco Chemical Co., Textile Chemicals Div., Harrison, N. J.

T-559 FLOW CONTROL Complete information on largest selection of values to handle flow control requirements. William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

T-561 PUMP POURABLE PASTES. Bulletin tells how Moyno pumps can pump any textile liquid that can be forced through a pipe, even if highly viscous or corrosive. Robbins & Myers. Inc., Springfield, Ohio.

T-563 POLYETHYLENE FINISHING AGENT. Booklet contains information needed to adopt Emulsifiable A-C polyethylene as a finishing agent to any particular process. Semet-Solvay Petrochemical Div., Allied Chemical Corp., 5th Floor T, Rector Street, New York 6, N. Y.

T-564 HYDROGEN PEROXIDE BLEACHING. Booklet discusses advantages, operating details and savings in chemical costs of Activated Hydrogen Peroxide Bleaching Process for Cotton Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-566 ETHYLEX GUMS. Brochure describes properties of hydroxy ethyl ether derivatives of corn starch. Applications of these noncongealing gums in warp sizing and finishing covered. A. E. Staley Mfg. Co., Box 151 Decatur, Ill.

T-570 CARPET DRYERS. Details, pictures, drawings on driven roll, conveyor, and tenter types. Andrews and Goodrich Div., 336 Adams St., Boston Dorchester, Mass.

T-572 DYEING MACHINERY FOR EVERY PURPOSE. Illustrated literature available on complete line of automatically controlled machinery. Gaston County Dyeing Machine Co., Stanley, N. C.

T-576 YARN PREPARATION. Describes products for yarn preparation, printing, finishing. Polymer Industries, Springdale, Conn.

T-577 STAINLESS DRY CANS. Information on stainless steel, 75 psi, reverse dished, head dry cans. Can be furnished Teflon-coated if desired. Sims Metal Works, West Point, Ga.

T-579 AUTOMATIC GUIDING EQUIPMENT. Catalog shows various types of automatic guiding equipment for accurate cloth guiding. Fife Mfg. Co., Inc., P. O. Box 9815, Oklahoma City, Okla.

fibers and yarns

T-601 FORTISAN-36, NEW TEXTILE FIBER. Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

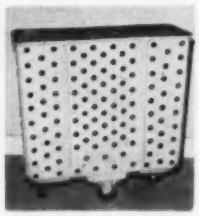
T-602 CAPROLAN NYLON HEAVY YARNS. Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

T-603 RAYON—MILE BY MILE. Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

T-604 THE CHEMSTRAND NYLON STORY. Describes the birth and growth of Chemstrand Nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

T-605 COLOR-FAST FIBERS. Further information on "Coloray," Courtauld's solution dyed rayon staple which is a contribution to color fastness in fabrics. Courtaulds (Alabama) Inc., 600 Fifth Ave., New York 20, N. Y.

T-608 TASLAN TEXTURED YARNS. Technical information on dyeing and finishing of new fabrics made with Taslan. E. I. du Pont de Nemours & Co., Wilmington 98, Delaware.



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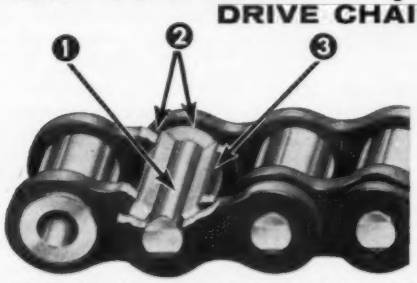

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BOOKLETS

T-609 PROCESSING NYLON STAPLE. Data sheet describes method of processing Du Pont 42 Nylon Staple in blends with cotton. Covers complete operation through sizing. Bulletin N-93, E. I. du Pont de Nemours & Co., Inc. Wilmington, Del.

laboratory

T-701 TESTING INSTRUMENTS. Descriptions of 37 instruments for testing textiles. Custom Scientific Instruments, Inc., 541 Devon St., Kearny, N. J.

T-703 SHADOGRAPH WEIGHING DEVICES. Pictures and information on various types of scales. Exact Weight Scale Co., Columbus 8, Ohio.

T-705 STROBOTAC. Measures speed of rotating, reciprocating or other cyclic motions. General Radio Co., West Concord, Mass.

T-706 YARN COUNT SCALE. Data sheet tells how direct-reading instrument provides fast, accurate method of determining yarn number. Exact Weight Scale Co., Columbus 8, Ohio.

T-712 AUTOMATIC MOISTURE CONTROL. Booklet tells how Hunter Electro-Psychrometers are used in measuring percentage of moisture in all classes of textiles, whether yarns or fabrics. Hunter Controls, Inc., Div., James Hunter Machine Co., North Adams, Mass.

services for management

T-801 FACTORING SERVICE. Details on advantages of factoring, including information on general banking and pension plans. Trust Company of Georgia, Atlanta, Ga.

T-805 PROFIT THROUGH FACTORING. Brochure gives facts on the use of factoring as a modern plan for developing sound business growth and added profits. Walter E. Heller & Co., Dept. T1-2, 105 W. Adams St., Chicago 99, Ill.

T-807 GROUP INSURANCE. Information on how textile group insurance can insure the happiness of your employees and make for a better running mill. Provident Life and Accident Insurance Co., Group Dept., Chattanooga, Tenn.

T-808 FACTORING. Complete details on services offered as mill factors. L. F. Dommerich, 271 Madison Ave., New York, N. Y.

T-810 THE WONALANCET WAY is the title of an editorial booklet published five times a year dealing with current problems. Write Wonalancet Company, 128 Burke St., Nashua, N. H.

T-812 BEECHCRAFTS FOR 1960. Booklet available from Southern Airways Company shows how Beechcraft executive airplanes can save executives time and money. Write Southern Airways Co., P. O. Box 718, Atlanta, Ga.

T-819 ORGANIZED LUBRICATION PAYS. Planning book entitled "Management Practices that Control Costs via Organized Lubrication" shows how to effect savings in five areas of plant operation. Available from Texaco, Inc., 135 E. 42nd St., New York 17, N. Y.

T-821 INVENTORY CONTROL. How a daily report of inventory condition mechanically producted on existing business machines showed a net direct payroll saving of more than 10,000 a year. Administrative Methods Dept., Werner Textile Consultants, 1430 Broadway, New York, N. Y.

plant operation

T-902 BELT LACING EQUIPMENT. Includes prices, specifications, etc. Clipper Belt Lacer Co., Grand Rapids, Michigan.

T-903 "MOTOR SELECTOR." How to select a-c motors for specific application. Bulletin B-2103. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

T-904 GEARMOTORS, MOTORGEARS, AND FLUID DRIVES. Catalog supplies complete information on double, triple, and quardruple reduction gearmotors and motorgears. Electrofluid and fluid drives are also explained. Link-Belt Company, Dept. PR, Prudential Plaza, Chicago 1, Illinois.

T-907 WRAP UP LINT PROBLEMS. Automatic lint filter removes lint from air, winds it into disposable roll. Bulletin 234, American Air Filter Co., 275 Central Ave., Louisville 8, Ky.

T-908 TEXTILE MOTORS. Bulletin describes compete line of textile motors. Diehl Mfg. Co., Finderne Plant, Somerville, N. J.

T-909 COMPRESSORS. WB two-stage water-cooled. Space-saving units require modest foundation up to 125 psi and 1150 cfm displacement. Bulletin WB-10. Gardner-Denver Company, Quincy, Illinois.

T-910 MODERN LUBRICATION METHODS. A report to management tells how modern lubrication methods can help save thousands of dollars in three major economic areas of textile plant management. Describes twelve operating advantages of automatic lubrication systems. Lincoln Engineering Co., 4010 Goodfellow Blvd., St. Louis 20, Mo.

T-911 LEATHER BELTING. Selection, installation, proper maintenance. Atlanta Belting Co., 508-510 Whitehall St., S. W., Atlanta, Ga.

T-912 STORY OF NYLON BRISTLE. Tells of discovery and production, with special attention to "Tynex," a form of nylon ideal for use in brushes. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

T-913 "ONE-SHOT" LUBRICATORS. Bulletin describes wide field of application for one-shot lubricators on machines requiring closely controlled but infrequent oil feed. Bijur Lubricating Corporation, Rochelle Park, N. J.

T-914 INDUSTRIAL GREASES. Describes multi-purpose lithium soap industrial greases. Sinclair Refining Co., 600 Fifth Ave., New York, New York.

T-917 BLOWERS AND EXHAUSTERS. Full description, including detailed drawings. Buffalo Forge Co., 490 Broadway, Buffalo 5, N. Y.

T-918 PAINT STRIPPING BOOKLET. Explains simplified method of stripping paint. Oakite Products, Inc., 22 Thames St., New York 6, New York.

T-921 CATALOG OF NEEDLE BEARINGS. Design, application for five types of needle bearings. The Torrington Co., Torrington, Conn.

T-924 BALL BEARINGS FOR TEXTILE MACHINERY. Bearings for all phases of textile processing. The Fafnir Bearing Co., New Britain, Conn.

T-925 LUBRICATION OF BEARINGS. Helpful list of do's and don't to prolong bearing life. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

T-931 NEW V-BELT DRIVES. Bulletin contains information on selection and operation of V-belt drives. Covers all types of V-belt drives. Dodge Mfg. Corp., Mishawaka, Ind.

T-932 SMOOTH ACCELERATION, DECELERATION. Describes eddy-current equipment for smooth, stepless acceleration and deceleration. Eaton Mfg. Co., 3307 14th Ave., Kenosha, Wis.

T-933 CATECHISM OF ELECTRIC MACHINERY. Booklet contains complete technical treatise on various electrical machines. Electrical terms defined. Fairbanks, Morse & Co., Fairbanks-Morse Bldg., Chicago 5, Illinois.

T-937 V-BELTS. Tells how raw materials and finished belts are tested and inspected. Quality control and experimental production covered. Booklet 5-51107, Dept. 794, Goodyear Tire & Rubber Co., Akron 16, Ohio.

T-938 EMERGENCY CHEMICAL CLEANING—Booklet tells how rust, scale and other deposits may be removed from heat exchange equipment, regardless of intricacy. Anderson Chemical Co., Inc., Box 1424, Macon, Georgia.

T-939 BOILER FEEDWATER TREATMENT. Bulletin describes BRAXON & FLAKO internal automatic boiler feedwater treatment and services of trained service engineers in eliminating the problems of scales, sludge, corrosion, etc. Anderson Chemical Co., Inc., P. O. Box 1424, Macon, Ga.

materials handling

T-1005 TRAMRAIL ENGINEERING AND APPLICATION. Data on how Tramrail equipment can cut handling costs. Cleveland Tramrail Div., Cleveland Crane and Engineering Co., 1036 East 289th St., Wickliffe, Ohio.

T-1007 MATERIALS HANDLING FOR TEXTILES. Shows how fibre trucks can increase efficiency, protect products. National Vulcanized Fibre Co., Wilmington 99, Del.

T-1013 TRUCKS DOFF, STORE, BECOME SPOOLER TRAY. Brochure tells how mobile boxes are being used as doff boxes, storage boxes, and spooler trays on Barber-Colman spooler. Fisher Mfg. Co., Hartwell, Ga.

T-1014 CARPET CORES, STORAGE TUBES. Literature on simplified storage and better cores for rugs. Sonoco Products Co., Hartsville, S. C.

T-1015 OVERHEAD CONVEYOR. Catalog features "Cable-Way" Overhead Conveyor which has low-cost, ease of installation, quiet operation and long life. Conveyor Division, The American MonoRail Co., Fourth and Franklin Sts., Tipp City, Ohio.

T-1016 GUIDE TO BETTER CLOSURES. For use as a guide for the evaluation of methods currently in use to effect economy and better production in the closure of fiber board boxes. Acme Steel Products Div., Acme Steel Co., 135th and Perry Ave., Chicago, Ill.

T-1020 AUTOMATIC WRAPPING. Tells how automatic packaging increases the sales appeal of textile products. Saves labor and materials and adds tamper-proof product protection. Write Hayssen Mfg. Co., Sheboygan, Wis.

T-1021 TUBES, BOBBINS, PIRNS. Information on world renowned yarn carriers, reliable as to stability, dimensions, weight. Emil Adolff (U. S. A. agents: Textube Corp., 695 Summer St., Stamford, Conn.).

T-1022 STRONG CORES. Data on lightweight, quality tubes and cores for textiles. Star Paper Tube, Inc., Rock Hill, S. C.

T-1023 MATERIALS HANDLING. Describes lightweight, durable, smooth products. Spaulding Fibre Co., Inc., Dover, New Hampshire.

T-1024 CONDITIONING TRUCK. Details on all-aluminum, non-rusting conditioning truck. Excel, Inc., Lincolnton, N. C.

MILL NOTES

Shelby (N. C.) Mills, Inc., and its selling agent, Iselin-Jefferson Co., Inc., have announced plans to expand into the decorative glass fiber fabrics field. The fabric will reach the market in the second quarter of 1961.

Dan River Mills, Inc., has entered into a licensing agreement with **Enterprises, Inc.,** for the production of twisted paper yarn and knitted paper fabrics.

The installation of 66 X-P 54-inch looms has been completed in the No. 5 weave room at Beaumont, S. C., plant of **Spartan Mills,** and 40 sets of metallic card clothing have been installed in the carding department. * * * At the Startex Mills, 168 looms in the print cloth weave room have been extended from 40 to 50-inches in width. A new air change system has been installed in the bleachery.

The houses in the mill village of the Borden plant of **J. P. Stevens & Co., Inc.,** located in Kingsport, Tenn., have been sold to employees.

Ponemah Mills, Inc., Taftville, Conn., has announced plans to dispose of unneeded real estate, buildings, and machinery. The firm will operate its most modern equipment and continue to supply fabrics developed by Ponemah, as well as other established-market cloth.

Hoosac Mills Corp., a division of Indian Head Mills, Inc., has purchased the buildings and other real estate of **Bachmann Uxbridge Worsted Corp.** Worsted and automotive fabric operations will be consolidated at the Talladega, Ala., and Cedartown, Ga., plants. Harry S. Stern, Jr., has been named vice-president and general manager. The reorganization plan calls for the withdrawal of Bachmann Uxbridge from the woolen business and the run-out of operations at the Uxbridge and Rivulet, Mass., and Putnam, Conn., plants. Operations at the Macon, Ga., plant have been discontinued.

A $50,000 addition will be constructed at the **Durham (N. C.) Hosiery Mills.** The firm expects to begin dyeing and finishing operations after new machinery has been installed. Approximately 250 people will be employed in the beginning of operations and ultimately the work force will be increased to about 400.

A 47,500 sq ft addition to the Borg Fabric division plant, Jefferson, Wis., for the expansion of knitting operations, has been announced by **Amphenol-Borg Electronics Corp.** Completion is expected in May of next year.

A new corporation, **Michael Mills, Inc.,** formed by executives of the Neisler division of Massachusetts Mohair Plush Co., has purchased the **Esther Yarn Mill Co.,** Boiling Springs, N. C. The building and machinery will be leased to Massachusetts Mohair and will be used for spinning cotton yarn. A. J. Maino is president of the new firm and Miles Baker is vice-president.

Abney Mills has awarded a contract for the construction of a 30,000 sq ft addition to the Toxaway mill at Anderson, S. C.

Rionor Ribbon Co., Inc., has liquidated the manufacturing part of the firm in Allentown, Pa.

All of the processes from the cotton opening room through the spinning department have been recorded on film at **The China Grove (N. C.) Cotton Mills Co.** The film is non-technical and will be shown to persons not familiar with the textile industry.

Reeves Brothers, Inc., has trans-

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Available with wing nut or quick lever reset for fast positive action.

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The Durant will outlive any comparable counter. Heavy 5/16" drive shaft is accurate-ground and polished steel. Heavy duty double worm drive provides longer count life.

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MILL NOTES

(from page 175)

ferred the machinery from a recently purchased plant in Quehanna, Pa., into the leased space of the old Ix Mills, located in Cornelius, N. C. Curon, a foamy chemical used on outerwear fabrics, will be manufactured.

Clark-Schwebel Fiber Glass Corp., an independent affiliate of M. Lowenstein & Son, Inc., has announced plans for a $3 million fiber glass weaving and finishing plant in Anderson, S. C. The plant is scheduled for completion around January 1st. Finished industrial and decorative glass fabrics will be manufactured.

An expansion program which will double the weaving capacity of the plant and require 30 to 40 additional employees, has been announced by the **J. B. Martin Co.,** Leesville, S. C.

The **Griffolyn Co., Inc.,** has completed the move from Madison, Wis., to Houston, Texas. The plant is now operating with about fifty employees.

Sunweb Corp., Miami, Fla., is manufacturing all webbing being sold by Chicopee Mills to the outdoor furniture trade.

A new firm, **Angier Knitting Corp., Inc.,** has been established in Angier, N. C. A 16,000 sq ft building will be constructed and equipment estimated to cost $75,000 will be installed. The plant will manufacture nylon-cotton knitted goods.

United Merchants & Manufacturers, Inc., New York, N. Y., has purchased **British Silk Dyeing Company** and its subsidiaries.

Belding Heminway Co., through the acquisition of Carl Joseph Co. and Industrial Fiber Glass Finishing Corp., has embarked on the weaving of fiber glass fabrics. The new organization will be known as **Belding Corticelli Fiber Glass Fabrics.**

A certificate of incorporation has been issued to **Cadillac Yarn Co., Inc.,** Paterson, N. J. The firm will be engaged in warping, winding, dyeing, sizing, and weaving. Incorporators are: Charles Solomon, Ben Bernstein, and Ernest I. Neidorff.

An expansion program which calls for approximately 30,000 sq ft of addition and alterations has been announced by **Schneider Silk Mills, Inc.,** Taylorsville, N. C.

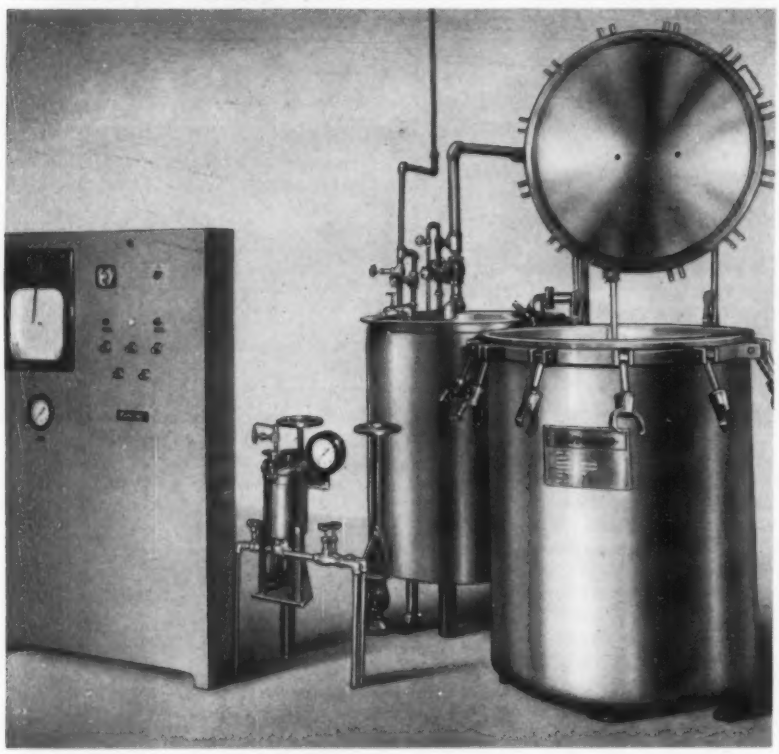
A new dyeing plant which will replace the present yarn dyeing department, has been announced by **Wiscassett Mills Co.,** Albemarle, N. C. The yarn mill will take over the old dye house. The firm is clearing 16 company houses from the mill village to make space for the new plant.

A new firm, **Shelby Seamless Hosiery Mills, Inc.,** has begun operations in a 12,000 sq ft plant four miles northwest of Shelby, N. C. The firm will employ between 30 and 40 people when all machines have been installed.

Four gold medals were recently awarded to **Cone Mills Corp.'s** fabrics at the International Fabric Exposition of the 1960 California State Fair. The award winning numbers are Tidewale, Doeskin, Lurvel, and Antler. All four fabrics are 100 per cent cotton.

Fulton Industries, Inc., Atlanta, Ga., has announced the acquisition of American Buildings Corp., Columbus, Ga.

Bates Manufacturing Co. recently marked its 110th anniversary. A century ago, 200 employees were required to keep the mills in operation



Cuts Original Cost and Maintenance Cost!

Larger batches and less maintenance are produced by high temperature . . . to 325° F, full flow separate reversing valve, and 0 — ring seals.

All pumps are mechanically sealed and construction is rugged. Type 304 or 316 stainless.

Request complete details today.

VENANGO ENGINEERING CO.

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PHONE: DE 8-6300

and today over 4,000 men and women are employed by the firm.

Approximately 1,000 men and women who work for the Stark, Reid, and Asbeston mills of the **U. S. Rubber Company** in Hogansville, Ga., were guests of the Chamber of Commerce at the "U. S. Rubber Company Appreciation Day." A highlight of the occasion was the presentation of plaques to W. E. Clark, vice-president and general manager of the textile division; A. C. (Mike) Link, manager of the plant; and Eddie B. Todd, chairman of the employees' council of the three installations.

The American Thread Co., Inc., climaxing a $1,600,000 equipment modernization program in the Tallapoosa, Ga., mill, staged an open house as its part in the city's recent centennial celebration. Visitors were escorted through twelve different departments, every one of which has either been added to, re-arranged or re-equipped during the past twelve months. They saw (1) 110 new machines, among them recently acquired

Statement of Ownership

Statement required by the act of August 24, 1912, as amended by the acts of March 3, 1933, July 2, 1946 and June 11, 1960 (74 Stat. 208) showing the ownership, management, and circulation of TEXTILE INDUSTRIES published monthly at Dalton, Georgia for October, 1960.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, W. R. C. Smith Publishing Co., Atlanta, Ga.; Editor, George H. Dockray, Atlanta, Ga.; Managing Editor, J. Frank Guest, Atlanta, Ga.; Business Manager, John C. Cook, Atlanta, Georgia.

2. The owners are: W. R. C. Smith Publishing Co., Atlanta, Ga.; Estate of W. R. C. Smith, Atlanta, Ga., W. J. Rooke, Atlanta, Ga.; O. A. Sharpless, Atlanta, Ga.; T. W. McAllister, Windermere, Fla.; E. W. O'Brien, Atlanta, Ga.; J. C. Cook, Atlanta, Ga.; R. P. Smith, Atlanta, Ga.; Mrs. E. L. Philpot, Atlanta, Ga.; A. F. Roberts, Atlanta, Ga.; S. J. Jones, Atlanta, Ga.; W. C. Herbert, Atlanta, Ga.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

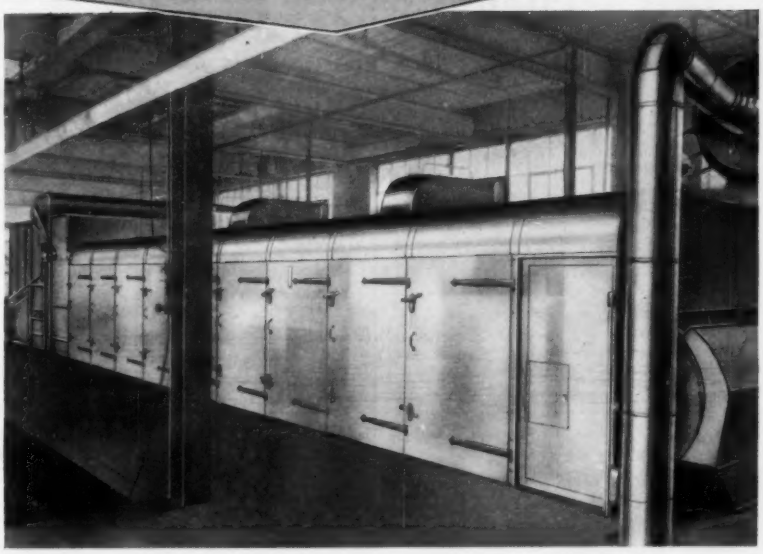
4. Paragraphs 2 and 3 include, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was (This information is required by the act of June 11, 1960, to be included in all statements regardless of frequency of issue.): 14,512.

WALTER MITCHELL, JR.
Advertising Manager

Sworn to and subscribed before me this 20th day of September, 1960.
SEBA J. JONES, Notary Public
(SEAL)
My commission expires February 23, 1962.

How to Cut Costs in Fibre Processing



The SARGENT System...

Fully Automatic Handling of Natural and Synthetic Staple from Dye Kettle or Washer to Card.

Delivers uniformly dried, lofty stock at high volume rate. Releases manpower for other work. Better than 1,000 lbs. per hour produced continuously, day in, day out. Installations have cut processing costs better than one-third.
This highly efficient, economical Sargent-designed system has only five units:

1. Rotary type Wet Feeder takes air-blown wet fibres from the dyehouse, feeds them to squeeze roll machine. Has ball-bearing main cylinder with stainless steel teeth, a rotary comb, two heavy rubber aprons — one to feed fibre to main cylinder, the other to deliver fibres to nip of squeeze rolls.

2. Extractor has sectional rubber ring roll, hammered steel bottom roll with fine knurl. Pneumatic loading, two air cylinders, control panel and indicating dial. Working at 80 lbs. pressure estimated air consumption is 4 cfm.

3. Stock Fan and Cyclone Condensor. Stock fan takes fibres from extractor, delivers them to cyclone condensor mounted above hopper of dryer feed, opening fibres and conditioning them for even, smooth delivery to dryer.

4. Rotary Feeder delivers even layer of fluffed fibres to dryer conveyor. Designed to effect a semi-combing action, eliminating matted bunches for more uniform drying, fewer neps at card.

5. Dryer with Blow-Up Section. Air-flow is down through traveling stock, with up-draft at blow-up section, midway of dryer. A highly efficient way to redistribute fibres evenly over stainless steel perforated flight conveyor and to even out moisture content of all fibres. Equipped with air-operated recording type temperature controls complete with steam control valves and air filter. These dryers are designed for easiest cleanout, fastest installation and highest operating economy of any dryer on the market.

Every machine in the system boasts Sargent's rugged construction; with simplicity of design, minimum maintenance, dependable, steady performance. Here is a system to save you money, man-power, time. Let us give you complete details.

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THE RIGHT ANSWERS IN 3 SECONDS!

MOISTURE REGISTER'S MODEL 5 checks moisture accurately in almost every known textile. Any untrained operator can use it effectively – in any stage of production – on cones, beams, skeins; loose or compressed yarns and fibers; Wool, Cotton, Nylon, Rayon, Dacron, Orlon, etc.

It can be calibrated on the spot by plugging the test electrode into the self-checking standard . . . then trimming to zero if necessary. It's always right on the money.

Model 5 features:

- Trims to Zero on the spot.
- Portable, rugged, simple to use.
- Gives right answers, anywhere.
- Factory-set to your needs.
- All common textiles.
- 2-week free trial.

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Please send data on new Model 5's.

We are testing _____

in moisture range from _____ % to _____ %

Firm _____

By _____ Title _____

Address _____

City _____ State _____

MILL NOTES

(from page 177)

spinning, combing, roving, and drawing equipment; (2) a 16,500 sq ft addition; (3) a new testing laboratory and (4) a new air change system.

Burlington Hosiery Co. has completed its new finishing plant in Pomona, Calif., designed for straight line operation with flexibility which anticipates changes in plant layout.

Tuscarora Cotton Mills, Mount Pleasant, N. C., has purchased the outstanding stock of **Oakboro Cotton Mills Co.** John Dry has been named plant superintendent.

Federal Prison Industries, Inc., plans to build in Atlanta, Ga., a $2 million building for its textile mill to replace the facility built in 1919. An additional 80,000 sq ft of floor space will be incorporated into the new structure.

Jefferson (Ga.) Mills has announced plans to increase the size of the plant and production facilities by 20 per cent beginning the first of 1961. About 20 per cent of the equipment will be replaced.

Installation of new, improved dye jigs has been competed at the **Chase Bag Co.** open-mesh fabric plants at Goshen, Ind., and Portland, Oregon.

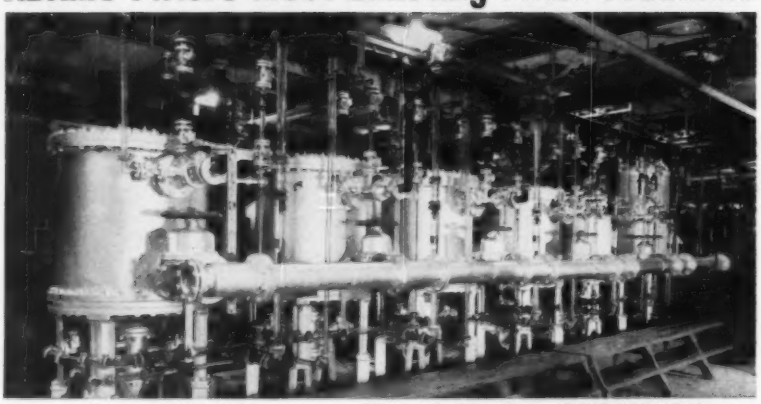
Upon completion of current orders, **Berkshire Woolen Co.** has announced that the Pittsfield, Mass., and Moncks Corner, S. C., plants will be closed.

A new yarn mill, **Houser Manufacturing Co.,** has been established in Cherryville, N. C. Howard Houser is manager.

A new textile printing plant, **Conway Finishing Co.,** has begun operations in Conway, S. C. The facility has occupied a warehouse containing 24,000 sq ft of floor space and will do contract printing for the trade throughout the Carolinas. The plant is designed to serve Conway Textiles, Inc.

Tait Yarn Co., Inc., Lincolnton, N. C., has announced the appointment of Collingwood, Ibach and Co., as sales agent in North Carolina, South Carolina, and Virginia.

ADAMS Filters Meet Exacting Filter Problems



Hazardous Liquids are a Specialty for ADAMS Filters

Hazardous liquids are totally contained in Adams filters. All types of critical liquids — alkaline solutions, mineral and organic acids, and hydrocarbons — are typical of the services where human safety demands no contact between the operator and the product. Adams design permits filtration in a totally enclosed filter which is backwashed without disassembly. Manual labor is minimum as the pressure backwash cleaning requires only the operation of a few valves. Only Adams filters reverse liquid flow at necessary high velocity and pressure to effectively clean the filter medium.

The above Adams installation involves use of inert Poro-Stone elements, rubber-lined filters, and Pyrex pipe to prevent product contamination. Complete removal of colloidal iron compounds from acid solution is dramatically illustrated by dark input and crystal clear output — Pyrex pipe. Three subsequent orders were received from this satisfied customer.

Whatever your filtration problem, an economical Adams plant will meet requirements. Write our sales department today for recommendations. Manual and automatic operation available.

R. P. ADAMS CO., INC. 216 EAST PARK DRIVE BUFFALO 17, NEW YORK

SUPPLIER NOTES

A new plant for manufacture of "Oxytrol" low B. O. D. starch is under construction at **A. E. Staley Manufacturing Co.** Work on the 30,000 sq ft structure began last January and is going forward at full speed with installation of special production equipment developed by Staley. It is slated to start commercial output this year. The new warp sizing starch is currently being supplied to the textile industry in limited quantities from semi-commercial production at the Decatur pilot plant.

J. W. (Toby) Reid, sales representative of the textile division of **United States Rubber Co.**, has been assigned to the southern district sales office at Chattanooga, Tenn. Mr. Reid will work in Georgia, Alabama, and Tennessee, serving the tufting and chenille manufacturers.

Nopco Chemical Co. has announced the installation of new laboratories for the industrial and fine chemicals division. The new facilities will better enable the firm to continue to expand research, service the needs of its customers, and find new applications for their products.

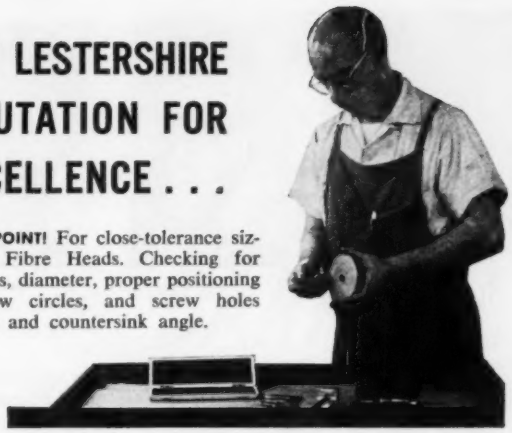
F. Emanuel Bulger has joined **Ideal Machine Shops, Inc.**, as a sales representative in spindle and flyer service, covering Georgia and Alabama.

Harold L. Sager has been appointed assistant manager of the New England district sales office of the dyes and chemicals division of **E. I. du Pont de Nemours & Co., Inc.**

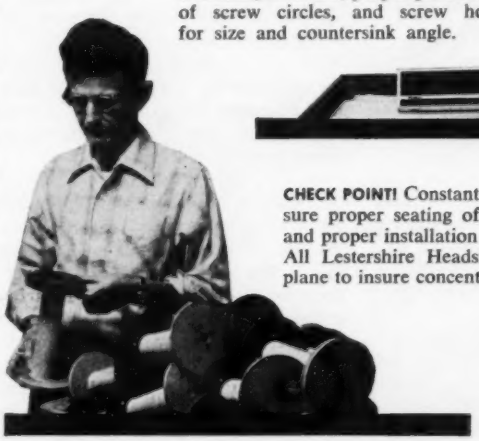
William Ray Rogers has joined the sales staff of the **F. A. Young Machine Co.** Mr. Rogers will specialize in the sale and engineering of NYAF changeovers for both cotton and synthetics, the Vertical "Y" frames, and the conversion of small gauge and narrow gauge frames to wide gauge.

William A. Cooper has been named to the newly-created post of

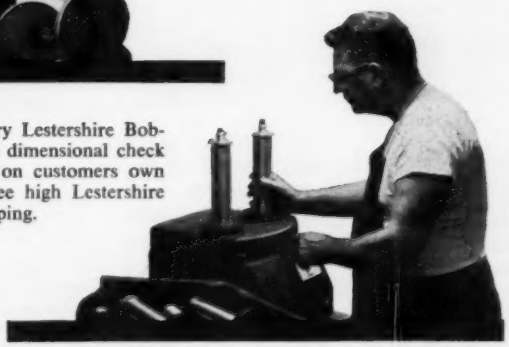
HERE'S WHY LESTERSHIRE HAS A REPUTATION FOR BOBBIN EXCELLENCE . . .



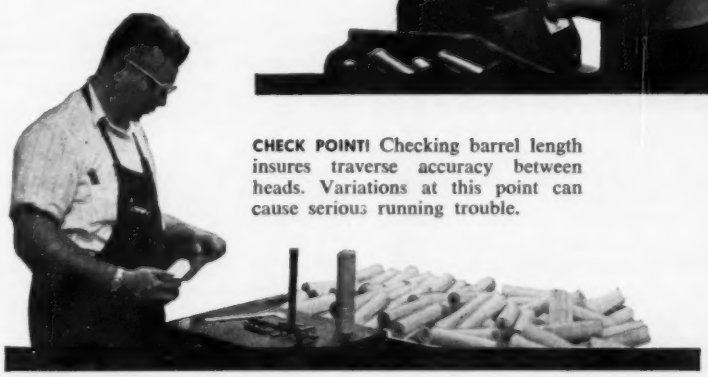
CHECK POINT! For close-tolerance sizing of Fibre Heads. Checking for thickness, diameter, proper positioning of screw circles, and screw holes for size and countersink angle.



CHECK POINT! Constant checking to insure proper seating of anchor screws and proper installation of felt washers. All Lestershire Heads are in proper plane to insure concentricity.



CHECK POINT! Every Lestershire Bobbin receives a final dimensional check plus trial running on customers own spindle to guarantee high Lestershire quality before shipping.



CHECK POINT! Checking barrel length insures traverse accuracy between heads. Variations at this point can cause serious running trouble.

Many times you can't see it, often you can't feel it, sometimes you can't even measure it, but that extra ingredient of quality is built into every Lestershire Bobbin and it doesn't cost you one cent more! Expert craftsmanship combined with consistent quality control from materials through every fabricating step. This is your assurance of design accuracy, bobbin concentricity, true balance and over-all bobbin perfection in bobbin, after bobbin, after bobbin.

Having trouble with bobbins? Next time try Lestershire. Write for complete Bobbin Catalog direct to Dept. W-11.

LESTERSHIRE SPOOL DIVISION

NATIONAL VULCANIZED FIBRE CO.

WILMINGTON 99, DEL. • *Plant:* 140 Baldwin St., Johnson City, N.Y. • *In the south:* Odell Mill Supply Co., Greensboro, N. C.; Greenville Textile Supply Co., Greenville, S. C.

Mr. Ballantyne
Crompton & Knowles

Mr. Beardsley
Corn Products

Mr. Kennedy
Southern Machinery

Mr. Thompson
Square D

Mr. Lovein
Morton Machine

Mr. Abernathy
Eastman Chemical

SUPPLIER NOTES

(from page 179)

manager of distributor sales for **The Goodyear Tire & Rubber Company's** industrial products division. Mr. Cooper will be headquartered in Akron, Ohio.

Ray W. Thompson has been appointed to the position of general sales manager of the marketing division of **Square D Co.** Mr. Thompson will act as liaison between headquarters and Square D's various sales regions.

Harry R. Kennedy has been appointed director of research and product development of **Southern Machinery Company.**

Allan F. Ballentyne has accepted the position of managing director of **Crompton & Knowles (Canada), Ltd.** Mr. Ballantyne was formerly sales manager as well as secretary and a director of the company. * * * Crompton & Knowles Corp. has acquired **Bates Chemical Co.** The latter firm will be expanded through affiliation with the Althouse division. No change in personnel is anticipated.

Charles E. Lovein, Jr., has joined the engineering department of **Morton Machine Works, Inc.** Among other duties, Mr. Lovein will be assistant to the president.

E. Carl Snyder has been appointed manager of sales-service for the industrial division of **Corn Products Sales Co.** Mr. Snyder succeeds Thomas A. Bruce, who has returned to the west coast as assistant western regional manager of the industrial division. Edward W. Beardsley has been named southern regional vice-president of the division. Mr. Beardsley succeeds Fred C. Hassman, who has been appointed southern regional vice-president of the Best Foods division, and will be headquartered in Atlanta, Ga.

Frank W. Abernathy has been named a district sales manager for the chemical division of **Eastman Chemical Products, Inc.,** a subsidiary of Eastman Kodak Co. Mr. Abernathy will direct sales of the industrial and specialty chemicals in the New England area from his office in Framingham, Mass. * * * Bruce F. Roberts has been appointed assistant director of merchandising of the fibers division.

Plans for expansion of the mercury cell chlorine-caustic soda plant at Brunswick, Ga., have been announced by Solvay Process division of **Allied Chemical Corp.** The new facilities will increase production capacity by approximately 100 tons per day. * * * A market research division within the development department has been created to appraise sales potential of new products. Wendell T. Butler has been named manager.

Fletcher Industries, Inc., has completed moving its entire Philadelphia operations to Cheltenham, Pa. A major part of the operation will be the rebuilding of narrow fabric looms.

W. F. Fancourt Co. has announced plans to build a new 22,000 sq ft building in Greensboro, N. C. The new plant will house laboratory facilities and incorporate company offices presently located in Burlington, N. C.

Norman F. Garrett, vice-president of **Whitin Machine Works** and general manager of the Whitinsville division, has been named to the newly-created position of executive vice-president. * * * E. Kent Swift, Jr., has been appointed vice-president, research and development. Mr. Swift, former director of research, is responsible for development engineering and will be assisted by Dr.

INDUSTRIAL ENGINEERS

- MODERNIZATION PROGRAMS
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Specializing in Textiles Since 1914

ALLEN BEAM COMPANY

NEW BEDFORD, MASS.

Beams for all makes of
High Speed Warpers

LOOM BEAMS

Adjustable Loom Beam Heads

"Good Warps are made on Good Beams"

Save On Speed Reduction Costs

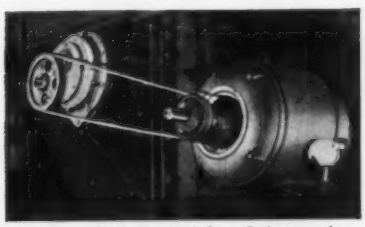
WITH A Lovejoy

Shaft Mounted
GEAR REDUCER

COSTS LESS THAN OTHER SHAFT MOUNTED REDUCERS

- Eliminate supporting structures and shaft couplings required by conventional reducers.
- End alignment, simplify belt tensioning problems.
- Save space in any drive arrangement . . . mount vertically or at any angle.
- Install easily on new or old equipment.

Eighteen stock models: 8 to 425 rpm.; fractional to 120 hp.; 4.5:1 (single reduction), 14.7:1 (double reduction) nominal ratios.



Lovejoy Shaft Mounted Gear Reducer and Lovejoy Variable Speed Pulley provide an efficient, compact combination for driving a battery of drying vats. Simple adjustment of rod and turnbuckle maintains proper belt tension.

Request prices and Catalog R-58.

LOVEJOY FLEXIBLE COUPLING CO.
4961 W. LAKE STREET • CHICAGO 44, ILLINOIS

Zoltan S. Szaloki, recently appointed director of research.

Thomas T. Allan has been appointed to the newly-created position of assistant manager of the industrial chemical sales department of **Virginia Smelting Co.** Mr. Allan will be headquartered at the executive offices and factory in West Norfolk, Va.

Francis A. Kraft has been promoted to New England manager for **Becco Chemical Division** of Food

Mr. Kraft

Machinery and Chemical Corp. Mr. Kraft will maintain headquarters in Framingham, Mass. Tom Quealy has been appointed a technical representative. Philip D. Caine, formerly New England manager, has been promoted to sales promotion manager for the division, with headquarters in New York City. Mr. Caine will have charge of advertising and sales promotion activities, including market-development for new products.

National Starch and Chemical Corp. recently opened a new textile service laboratory headquarters of the southeastern division, 87 Haynes St., N. W., Atlanta, Ga. The facility is staffed and equipped to handle customer service problems for the industry. Howard M. Smith is in charge and will direct technical service activities for the southeastern division.

James Hunter, Inc., subsidiary of the James Hunter Machine Co., has acquired the patents and rights to cotton opening and cleaning equipment made by the Textile Machinery division of the Cen-Tennial Cotton Gin Co.

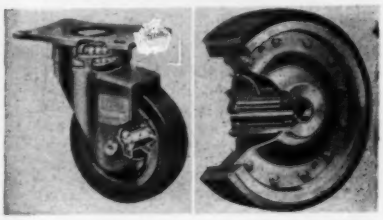
Alpaslan M. Purut, field technical service representative in dyeing and finishing, has been transferred to the Charlotte, N. C., office of **American Cyanamid Co.**

To provide maximum service for customers, the midwest representa-

Longer Wear at Lowest Cost

DARNELL
CASTERS & WHEELS

Always SWIVEL and ROLL



1 RUBBER TREADS

. . . a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

2 RUST-PROOFED

. . . by zinc plating, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

3 STRING GUARDS

. . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

4 LUBRICATION

. . . all swivel and whee bearings are factory packed with a high quality grease that "stands up" under attack by heat and water. Zerk fittings are provided for quick grease-gun lubrication.

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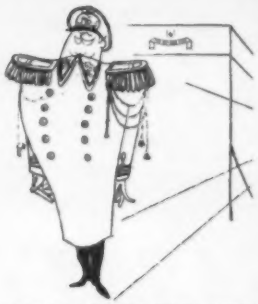

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Salon-size rooms • Terraces • New appointments, newly decorated • New 21" color TV • FM radio • New controlled air conditioning • New extension phones in bathroom • New private cocktail bar • Choice East Side, midtown area • A new concept of service. Prompt, pleasant, unobtrusive.

Single $15 to $22 Suites to $60
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ANDERSON SHIELDS

will reduce . . .
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of your . . .
SPOOLS AND BOBBINS

Send Us Your Problems:
We Will Cooperate
— To Save You Money.

TEXTILE SHIELD CO., INC.
LAWRENCE, MASS., U.S.A.
SERVING NEW ENGLAND SINCE 1917

SUPPLIER NOTES

(from page 181)

tive of **Ludell Mfg. Co.,** Edward Mathews, is now operating out of Cleveland, Ohio.

Turbo Machine Co. has announced the appointment of Francis J. Dougherty as coordinator of engineering.

E. L. Herbert has joined the **Edward J. McBride Co., Inc.,** as sales engineer for the Middle Atlantic and

Mr. Herbert

New England states. Mr. Herbert was formerly associated with Kidde Textile Machinery Corp.

Anthony F. Lema has assumed sales manager duties for **U. S. Textile Machine Co.,** and its subsidiary, Utex, Inc. * * * Pacific J. Thomas has been appointed first vice-president and director of engineering, research and development.

Applied Engineering Company has announced the appointment of **R. S. Stover Company** as sales representatives for its APCO line of propane-air mixing systems in Iowa, western Illinois, Nebraska, and southeastern South Dakota.

Eastern Color & Chemical Co. has named James Pilkington to its staff as director of application and technical service.

Polymer Industries, Inc., has announced completion of the new plant expansion which doubles the previous laboratory, production, office and warehousing space. The new facilities include, in addition to an all-new general office area, a tank farm, a solvent-mixing plant, a polymerization plant, and a 100 per cent increase over former production and laboratory areas.

Eugene Jacobson has been elected a vice-president of **Sun Chemical Corp.**

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Man Who Knows

KNITTING

Man with pattern wheel experience on Supreme R.O.F. or similar machines. Good opportunity for a knitter-mechanic with fundamental knitting know-how, and initiative to develop in an uncrowded field. Old established firm on East Coast. Send complete resume and salary requirements. All replies held in strict confidence. Box 101, Textile Industries, 806 Peachtree St., N. E., Atlanta 8, Ga.

Equipment Development

ENGINEER

Unique endless industrial fabric developments for application in paper, other industries requires conception and development of completely new equipment for their successful operation.

Experience designing textile finishing machinery provides excellent background for this interesting growth opportunity.

Huyck Equipment Co.
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TEXTILE GRADUATE - 34 years old. Now employed as assistant superintendent in large diversified weaving plant. Wants to locate in Mexico or South America as assistant superintendent, superintendent or consultant. Expert in carding and spinning, cotton or synthetics. Best of references. Resume upon request. Write Box 102, Textile Industries, 806 Peachtree St., N. E., Atlanta 8, Ga.

BRASS **PIN-PLATES** All Sizes

PUT YOUR PIN TENTERS IN TIP-TOP CONDITION

SEND US OLD PLATE FOR QUOTATION

All Diameters Any Length

SOUTHERN TEXTILE WORKS
P. O. BOX 404 ANDERSON, S. C.

BOBBINS—BOBBINS—BOBBINS

Our specialty is good used automatic loom bobbins. We also deal in twister and roving bobbins. Send us samples of what you need or what surplus bobbins you have.

CHARLES G. STOVER COMPANY
West Point, Georgia

FOR BEST RESULTS USE TEXTILE INDUSTRIES' WANT ADS

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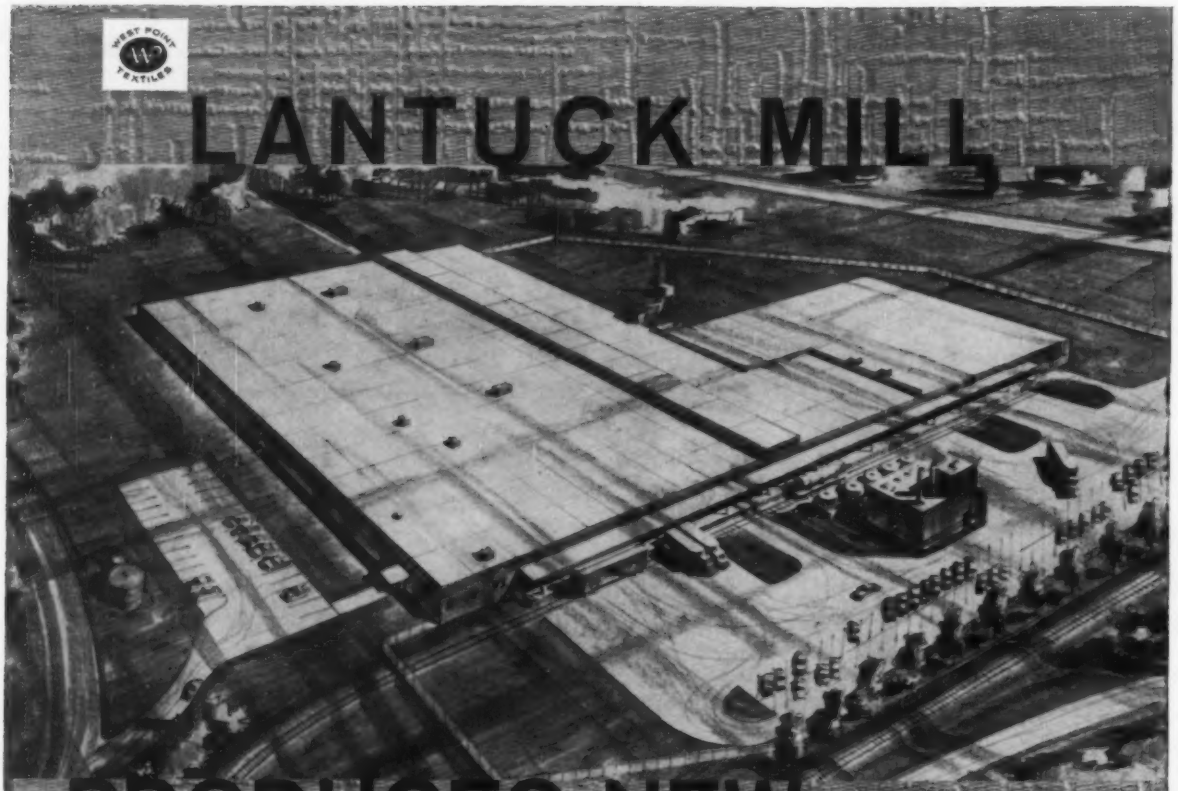

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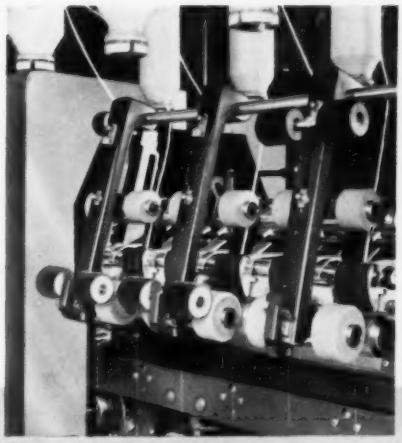

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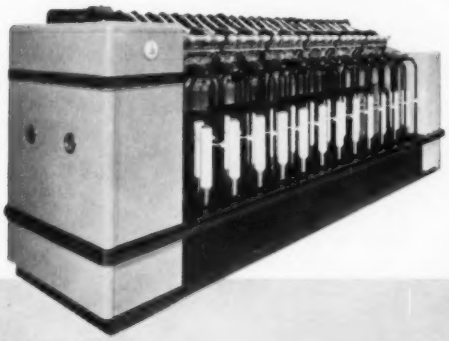

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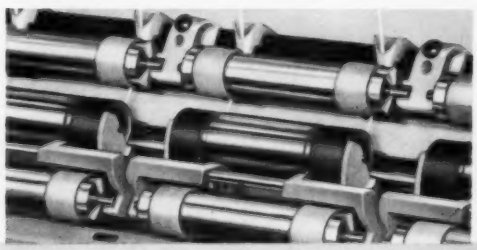

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